

GREATER TORONTO AREA

3Rs ANALYSIS

SOCIAL ENVIRONMENT

TECHNICAL APPENDIX

FINAL - MAY 1994



Ministry of Environment and Energy

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GREATER TORONTO AREA 3Rs ANALYSIS
SOCIAL ENVIRONMENT TECHNICAL APPENDIX

Prepared by Hardy Stevenson and Associates
for
Fiscal Planning and Information Management Branch
Ministry of Environment and Energy

FINAL - MAY 1994



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**GTA 3Rs ANALYSIS
SOCIAL ENVIRONMENT TECHNICAL APPENDIX**

Table of Contents

	Page
1.0 INTRODUCTION	1-1
1.1 Background	1-1
1.2 Purpose of Study	1-1
1.3 Study Approach	1-2
1.4 Purpose of the Social Environment Assessment and Study Objectives	1-2
1.5 Outline of Report	1-3
2.0 APPROACH	2-1
2.1 Overview	2-1
2.1.1 Phase One	2-1
2.1.2 Phase Two	2-3
2.2 Scoping Resident and IC&I Attitudes and Behaviour, and Potential Social Effects	2-7
2.3 Social Impact Assessment Criteria	2-9
2.4 Data Sources and Method of Analysis	2-10
2.4.1 Demographic Methodology	2-14
2.4.2 Housing Methodology	2-18
2.4.3 Employment Methodology	2-19
2.4.4 Regional Municipal Staff Interviews	2-20
2.4.5 Industrial, Commercial & Institutional Sector Interviews	2-20
2.4.6 IC&I Focus Group Research	2-21
2.4.7 Selected Facility Operator Interviews	2-22
2.4.8 Case Studies	2-22
2.4.9 Literature Review	2-23
2.4.10 Attitude Surveys	2-23

	Page
2.4.11 Review of Public Comments on Waste Management Initiatives	2-24
2.4.12 Complaint/Compliance Survey of 3Rs Facilities	2-24
2.4.13 Input From Consultation Activities	2-25
2.4.14 Input From GTA 3Rs Analysis Study Team	2-25
2.5 Assumptions	2-25
References	2-29
Personal Communications	2-31
 3.0 EXISTING SOCIAL ENVIRONMENT CONDITIONS	 3-1
3.1 Greater Toronto Area	3-1
3.1.1 Description	3-1
3.1.2 Decision-Making Support for the GTA	3-3
3.1.3 Demographic Characteristics	3-3
3.1.3.1 Population	3-4
3.1.3.2 Lifestyle and Culture	3-7
3.1.4 Housing	3-14
3.1.5 Employment	3-22
3.2 Durham Region	3-26
3.2.1 Demographic Characteristics	3-26
3.2.2 Housing	3-33
3.2.3 Employment	3-33
3.3 Metro Toronto	3-34
3.3.1 Demographic Characteristics	3-34
3.3.2 Housing	3-35
3.3.3 Employment	3-36
3.4 York Region	3-37
3.4.1 Demographic Characteristics	3-37
3.4.2 Housing	3-38
3.4.3 Employment	3-38

	Page
3.5 Peel Region	3-39
3.5.1 Demographic Characteristics	3-39
3.5.2 Housing	3-39
3.5.3 Employment	3-40
3.6 Halton Region	3-41
3.6.1 Demographic Characteristics	3-41
3.6.2 Housing	3-41
3.6.3 Employment	3-41
3.7 3Rs Legal and Regulatory Framework within the GTA	3-41
3.8 Residential/Municipal Attitudes and Behaviours	3-43
3.8.1 Waste Management	3-45
3.8.2 Residential Recycling and Collection	3-47
3.8.3 Residential Leaf and Yard Waste Collection	3-51
3.8.4 Residential Household Composting	3-51
3.8.5 Other Residential Waste Diversion (HHW, Toxic Taxi, Pilot Wet-Dry, White Goods Collection, White Goods Drop-Off, etc.)	3-56
3.8.6 Composting Facilities	3-56
3.8.7 Reuse Centres and Activities	3-58
3.8.8 Public MRFs	3-58
3.8.9 Residential Recycling Depots and Transfer Stations	3-59
3.8.10 Residential Promotion, Education and Policies	3-59
3.9 Industrial, Commercial and Institutional Attitudes and Behaviours	3-61
3.9.1 Overview of IC&I Attitudes	3-61
3.9.2 IC&I Collection	3-63
3.9.3 IC&I Processing	3-65
3.9.4 IC&I Reuse	3-66
3.9.5 IC&I Reduction	3-66
3.9.6 IC&I Programs	3-68
3.9.7 IC&I Promotion & Education	3-70
3.9.8 Focus Group Research	3-71
References	3-73

	Page
Personal Communications	3-76
 4.0 ASSESSMENT AND EVALUATION OF THE 3RS SYSTEMS	 4-1
4.1 Introduction	4-1
4.2 Overview	4-1
4.2.1 Criteria Ranking	4-1
4.2.2 System Net Effects Analysis	4-2
4.2.3 Mitigation and Enhancement	4-5
4.2.3.1 Types of Mitigation and Enhancement Measures	4-6
4.3 Assessment and Evaluation	4-8
4.3.1 Durham Region	4-9
4.3.1.1 Social Impact Criteria	4-9
4.3.1.2 Social Acceptability	4-13
4.3.2 Metro Toronto	4-20
4.3.2.1 Social Impact Criteria	4-20
4.3.2.2 Social Acceptability	4-24
4.3.3 York Region	4-31
4.3.3.1 Social Impact Criteria	4-31
4.3.3.2 Social Acceptability	4-35
4.3.4 Peel Region	4-42
4.3.4.1 Social Impact Criteria	4-42
4.3.4.2 Social Acceptability	4-46
4.3.5 IC&I Sector	4-53
4.3.5.1 Social Impact Criteria	4-53
4.3.5.2 Social Acceptability	4-56
5.0 Summary of Findings	5-1
5.1 Residential: Social Environment	5-1
5.2 IC&I: Social Environment	5-3

Bibliography

Schedules

A.	Residential and IC&I 3Rs System Components	A-1
B.	System Net Effects Tables	B-1
C.	Regional Municipal Staff Interview Summary	C-1
D.	IC&I Association Interview Summary	D-1
E.	Facility Operator Interview Summary	E-1
F.	GTA Generic Net Effects Tables	F-1

List of Tables

Table 2.1	Revisions to Social Criteria and Indicators	2-11
Table 2.2	Social Assessment Criteria and Indicators	2-15
Table 2.3	Social Data Sources	2-28
Table 3.1	Historic Population Levels: Greater Toronto Area	3-6
Table 3.2	Greater Toronto Area: Share Of Population Growth By Region (Base Projection) (Percent)	3-7
Table 3.3	Greater Toronto Area: Population Projections By Region	3-9
Table 3.4	Greater Toronto Area: Shifts in Language Diversity	3-10
Table 3.5	Greater Toronto Area - Age Profile 1981, 1986, 1991	3-12
Table 3.6	Greater Toronto Area - Median Age Actual and Projected	3-13
Table 3.7	Greater Toronto Area - Average Income By Household	3-14
Table 3.8	Greater Toronto Area - Households and Household Size By Region And Local Municipality	3-16
Table 3.9	Greater Toronto Area: Average Household Size By Region	3-18
Table 3.10	Greater Toronto Area: Ownership/Rental Characteristics, 1991	3-19
Table 3.11	Greater Toronto Area: Percentage Household Types - 1991	3-19
Table 3.12	Greater Toronto Area: Household Projections By Region	3-20
Table 3.13	Greater Toronto Area: Household Projections By Type	3-21
Table 3.14	Greater Toronto Area: Employment By SIC, 1981	3-27
Table 3.15	Greater Toronto Area: Employment By SIC, 1991	3-28
Table 3.16	Greater Toronto Area: Employment Projections By Region	3-29

	Page
Table 3.17	Greater Toronto Area: Summary Percentage Of Employment By SIC, 1981-1991
	3-30
Table 3.18	Greater Toronto Area: Employment Trends By SIC, 1991-2015
	3-31
Table 3.19	Percentage Labour Force By Place Of Residence: Greater Toronto Area, 1981, 1986, 1991
	3-32
Table 4.1	System Net Effects: Social Environment (Sample)
	4-4
Table 4.2	Durham Region: Residential Systems Ranking Summary For Social Environment
	4-15
Table 4.3	Durham Region: Residential Systems Ranking Summary For Social Acceptability
	4-18
Table 4.4	Metro Toronto: Residential Systems Ranking Summary For Social Environment
	4-26
Table 4.5	Metro Toronto: Residential Systems Ranking Summary For Social Acceptability
	4-29
Table 4.6	York Region: Residential Systems Ranking Summary For Social Environment
	4-37
Table 4.7	York Region: Residential Systems Ranking Summary For Social Acceptability
	4-40
Table 4.8	Peel Region: Residential Systems Ranking Summary For Social Environment
	4-48
Table 4.9	Peel Region: Residential Systems Ranking Summary For Social Acceptability
	4-51
Table 4.10	GTA IC&I: Systems Ranking Summary For Social Environment
	4-58
Table 4.11	GTA IC&I: Systems Ranking Summary For Social Acceptability
	4-61
Table 5.1	Summary of Residential 3Rs Systems Rankings By Region: Social Environment
	5-1
Table 5.2	IC&I 3Rs System Rankings: Social Environment
	5-3

SCHEDULE A

Table A.1	Region of Durham Residential System Components	A-1
Table A.2	Metro Toronto Residential System Components	A-7
Table A.3	York Region Residential System Components	A-14
Table A.4	Peel Region Residential System Components	A-20
Table A.5	GTA IC&I System Components	A-28

SCHEDULE B

Table B1.1	Durham Region Residential Existing System Net Effects	B1.1-1
Table B1.2	Durham Region Residential Existing/Committed System Net Effects ..	B1.2-1
Table B1.3	Durham Region Residential Direct Cost System Net Effects	B1.3-1
Table B1.4	Durham Region Residential Expanded Blue Box System Net Effects ..	B1.4-1
Table B1.5	Durham Region Residential Wet/Dry System Net Effects	B1.5-1
Table B1.6	Durham Region Residential Mixed Waste Processing System Net Effects	B1.6-1
Table B2.1	Metro Toronto Residential Existing System Net Effects	B2.1-1
Table B2.2	Metro Toronto Residential Existing/Committed System Net Effects ...	B2.2-1
Table B2.3	Metro Toronto Residential Direct Cost System Net Effects	B2.3-1
Table B2.4	Metro Toronto Residential Expanded Blue Box System Net Effects ..	B2.4-1
Table B2.5	Metro Toronto Residential Wet/Dry System Net Effects	B2.5-1
Table B2.6	Metro Toronto Residential Mixed Waste Processing System Net Effects	B2.6-1
Table B3.1	York Region Residential Existing System Net Effects	B3.1-1
Table B3.2	York Region Residential Existing/Committed System Net Effects ...	B3.2-1
Table B3.3	York Region Residential Direct Cost System Net Effects	B3.3-1
Table B3.4	York Region Residential Expanded Blue Box System Net Effects ...	B3.4-1
Table B3.5	York Region Residential Wet/Dry System Net Effects	B3.5-1
Table B3.6	York Region Residential Mixed Waste Processing System Net Effects	B3.6-1
Table B4.1	Peel Region Residential Existing System Net Effects	B4.1-1
Table B4.2	Peel Region Residential Existing/Committed System Net Effects ...	B4.2-1
Table B4.3	Peel Region Residential Direct Cost System Net Effects	B4.3-1
Table B4.4	Peel Region Residential Expanded Blue Box System Net Effects ...	B4.4-1
Table B4.5	Peel Region Residential Wet/Dry System Net Effects	B4.5-1
Table B4.6	Peel Region Residential Mixed Waste Processing System Net Effects	B4.6-1

		Page
Table B5.1	Durham Region Residential Existing System	
	Net Effects- Social Acceptability	B5.1-1
Table B5.2	Durham Region Residential Existing/Committed System	
	Net Effects- Social Acceptability	B5.2-1
Table B5.3	Durham Region Residential Direct Cost System	
	Net Effects- Social Acceptability	B5.3-1
Table B5.4	Durham Region Residential Expanded Blue Box System	
	Net Effects- Social Acceptability	B5.4-1
Table B5.5	Durham Region Residential Wet/Dry System Net Effects-	
	Social Acceptability	B5.5-1
Table B5.6	Durham Region Residential Mixed Waste Processing	
	System Net Effects-Social Acceptability	B5.6-1
Table B6.1	Metro Toronto Residential Existing System	
	Net Effects- Social Acceptability	B6.1-1
Table B6.2	Metro Toronto Residential Existing/Committed System	
	Net Effects- Social Acceptability	B6.2-1
Table B6.3	Metro Toronto Residential Direct Cost System	
	Net Effects- Social Acceptability	B6.3-1
Table B6.4	Metro Toronto Residential Expanded Blue Box System	
	Net Effects- Social Acceptability	B6.4-1
Table B6.5	Metro Toronto Residential Wet/Dry System Net Effects-	
	Social Acceptability	B6.5-1
Table B6.6	Metro Toronto Residential Mixed Waste Processing	
	System Net Effects-Social Acceptability	B6.6-1
Table B7.1	York Region Residential Existing System Net Effects-	
	Social Acceptability	B7.1-1
Table B7.2	York Region Residential Existing/Committed System	
	Net Effects-Social Acceptability	B7.2-1
Table B7.3	York Region Residential Direct Cost System Net Effects-	
	Social Acceptability	B7.3-1
Table B7.4	York Region Residential Expanded Blue Box System Net Effects-	
	Social Acceptability	B7.4-1
Table B7.5	York Region Residential Wet/Dry System Net Effects-	
	Social Acceptability	B7.5-1

	Page
Table B7.6 York Region Residential Mixed Waste Processing System Net Effects- Social Acceptability	B7.6-1
Table B8.1 Peel Region Residential Existing System Net Effects- Social Acceptability	B8.1-1
Table B8.2 Peel Region Residential Existing/Committed System Net Effects- Social Acceptability	B8.2-1
Table B8.3 Peel Region Residential Direct Cost System Net Effects- Social Acceptability	B8.3-1
Table B8.4 Peel Region Residential Expanded Blue Box System Net Effects- Social Acceptability	B8.4-1
Table B8.5 Peel Region Residential Wet/Dry System Net Effects- Social Acceptability	B8.5-1
Table B8.6 Peel Region Residential Mixed Waste Processing System Net Effects- Social Acceptability	B8.6-1
Table B9.1 GTA IC&I Existing System Net Effects: Social Environment	B9.1-1
Table B9.2 GTA IC&I Existing/Committed System Net Effects: Social Environment	B9.2-1
Table B9.3 GTA IC&I Extended 3Rs Regulations System Net Effects: Social Environment	B9.3-1
Table B9.4 GTA IC&I Expanded 3Rs Regulations System Net Effects: Social Environment	B9.4-1
Table B9.5 GTA IC&I Expanded 3Rs Regulations with Organics System Net Effects: Social Environment	B9.5-1
Table B9.6 GTA IC&I No Unprocessed Waste to Landfill System Net Effects: Social Environment	B9.6-1
Table B10.1 GTA IC&I Existing System Net Effects: Social Acceptability	B10.1-1
Table B10.2 GTA IC&I Existing/Committed System Net Effects: Social Acceptability	B10.2-1
Table B10.3 GTA IC&I Extended 3Rs Regulations System Net Effects: Social Acceptability	B10.3-1
Table B10.4 GTA IC&I Expanded 3Rs Regulations System Net Effects: Social Acceptability	B10.4-1
Table B10.5 GTA IC&I Expanded 3Rs Regulations with Organics System Net Effects: Social Acceptability	B10.5-1

Table B10.6	GTA IC&I No Unprocessed Waste to Landfill System Net Effects: Social Acceptability	B10.6-1
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List of Figures

	Page
Figure 2.1	GTA 3Rs Analysis Social Impact Assessment Process 2-2
Figure 2.2	GTA 3Rs Analysis Social Environment Assessment Generic Net Effects Analysis 2-4
Figure 2.3	GTA 3Rs Analysis Regional and IC&I Net Effects Evaluation 2-6
Figure 3.1	GTA: Map of Area Municipality Boundaries 3-2
Figure 3.2	Employment Trends by SIC for Greater Toronto Area, 1981-2015 3-24

1.0 INTRODUCTION

1.1 Background

In 1989, the government of Ontario announced its commitment to meeting a Provincial target of at least 50% reduction of waste going to landfills and incineration by the year 2000. This target, actually a waste diversion target (to be achieved through waste reduction, reuse and recycling -- the 3Rs) was confirmed by the present government in 1990.

To facilitate the achievement of the 50% target, the Province introduced the *Waste Management Act, 1992*. The Act broadens the government's powers to reduce waste sent to disposal through a variety of means. It also vests powers in the Interim Waste Authority (IWA), an agency created to ease the waste disposal crisis in the Greater Toronto Area (GTA). The IWA is complying with its mandate by conducting environmental assessments to locate three long-term landfill sites in the GTA.

The GTA Regional Municipalities of Peel and Durham are each defined for the IWA process as separate "primary service areas". Metropolitan Toronto and the Regional Municipality of York have been defined as a separate combined primary service area. Each of the three defined primary service areas is proposed to receive one new landfill facility through the IWA's process. The fifth GTA Regional Municipality, Halton, has already obtained approval for a landfill site and thus is not part of the present siting process.

1.2 Purpose of Study

This study has two purposes, each of which relates directly to a requirement created by the *Waste Management Act*.

The first requirement pertains to waste estimates. Section 14 of the *Waste Management Act* requires the Minister of Environment and Energy to provide a written estimate as to:

- a) *the amount of waste that would otherwise be expected to be generated in the primary service area (i.e. each of Peel, Durham and Metro/York) during a twenty-year period that will not be generated because of waste reduction efforts; and*
- b) *the amount of waste that will be generated in the primary service area during a twenty-year period that will not need to be disposed of in the site because of the reuse or recycling of materials that are or could become waste.*

These waste estimates were provided to the IWA by Minister's letter dated May 15, 1992. A copy of this letter may be found in Appendix A of the GTA 3Rs EA Input Document. The current study provides additional analysis of 3Rs activities, in support of the reasonableness of the waste diversion estimates previously provided.

The second requirement pertains to analyzing the 3Rs as "alternatives to" landfill waste disposal sites. Section 15 of the *Waste Management Act* requires that the IWA environmental assessments contain a description of, and statement of rationale for the 3Rs, as well as evaluate matters relating to the 3Rs as an alternative to the landfill waste disposal sites. By administrative agreement, MOEE committed to provide such a rationale and evaluation to the IWA for use in its environmental assessments. The present report fulfils this requirement.

1.3 Study Approach

The GTA 3Rs Analysis identifies and assesses alternative 3Rs systems, comprised of combinations of 3Rs programs, technologies and practices, that could reasonably be implemented in the GTA. In this report, this range of reasonable approaches to 3Rs are termed 3Rs system alternatives. It also determines the potential for each 3Rs system to divert waste over the twenty-year minimum life expectancy of the GTA landfill sites, and identifies the advantages and disadvantages of each system.

For purposes of the present analysis, an array of conceptually different 3Rs systems have been identified for addressing residential wastes, as well as for industrial, commercial, and institutional (IC&I) wastes. For each system, estimates of the amount of waste the system could potentially divert from disposal have been determined. An assessment, done on a non-site-specific, generic level and documented in this report, identifies the advantages and disadvantages to the environment of each potential 3Rs system, in keeping with the *Environmental Assessment Act*.

In conducting the 3Rs work, and providing estimates of waste that will not require disposal in the IWA established sites, MOEE is acting as a reliable authority in accordance with its legislative mandate, and not as the proponent or co-proponent of any of the 3Rs systems discussed. The alternatives presented in this report are not in any way structured as detailed implementation plans for the Province, the Regions or the private sector.

1.4 Purpose of the Social Environment Assessment and Study Objectives

This technical appendix documents the social environment input into the GTA 3Rs analysis. The primary purpose of this social environment assessment is to identify and assess the

effects to the social environment which may occur as a result of the implementation of Residential 3Rs systems within each of the four Regional Municipalities (Durham, Metro Toronto, York and Peel) and IC&I 3Rs systems within the GTA.

Using information from the social sciences, this report assesses how the components of the systems may affect people and the way they live, work and play. It assesses the behavioural changes that may occur in response to current and new components of six alternative systems. It considers changes for residents and businesses, i.e., what social change could result from the introduction of each of the 3Rs systems; and are these changes fair?

The study objectives of the social environment assessment are:

- Identification of existing social environment conditions within each of the four Regional Municipalities.
- Prediction of social environment effects as a result of the implementation of each of the alternative Residential 3Rs systems within each of the four Regional Municipalities and the alternative IC&I 3Rs systems in the GTA.
- Analysis of the potential social environment effects including proposed mitigation measures for the purposes of identifying net effects.
- Ranking the systems in the four Regional Municipalities from the perspective of the social environment.

In addition, the Social Acceptability of each 3Rs system was analyzed and provided input to the evaluation contained in the Service Technical Appendix.

1.5 Outline of Report

The Social Environment Technical Appendix is organized into five chapters and eight schedules. This chapter provides the rationale for this 3Rs analysis.

Chapter 2 describes the social environment analysis approach, method, data sources and study assumptions.

Chapter 3 describes the existing social conditions in the GTA and each of the regions. It also discusses current 3Rs management within the GTA, and residential, municipal and IC&I attitudes and behaviour to 3Rs activities.

Chapter 4 evaluates the residential systems for each Region and the IC&I systems.

Chapter 5 summarizes the ranking of the 3Rs residential systems in the four Regions and the 3Rs IC&I systems across the GTA.

2.0 APPROACH

This section outlines the approach used to identify potential effects to the social environment from alternative 3Rs systems.

2.1 Overview

The study area for the GTA 3Rs Analysis is the Greater Toronto Area (GTA), which consists of the regional municipalities of Durham, Metro Toronto, York, Peel, and Halton.

The GTA 3Rs social impact analysis assessed and comparatively ranked the alternative 3Rs systems based on the:

- Description of the existing and projected social environment of the GTA including demographic, lifestyle, housing and employment characteristics and attitudinal and behavioural data; and,
- Consideration of appropriate mitigation and enhancement measures.

In addition, the social analysis provided input to the evaluation of the service discipline through the assessment of the social acceptability of the systems and components. The social acceptability criterion is one of four criteria used to assess the level of service of each system (See Service Technical Appendix).

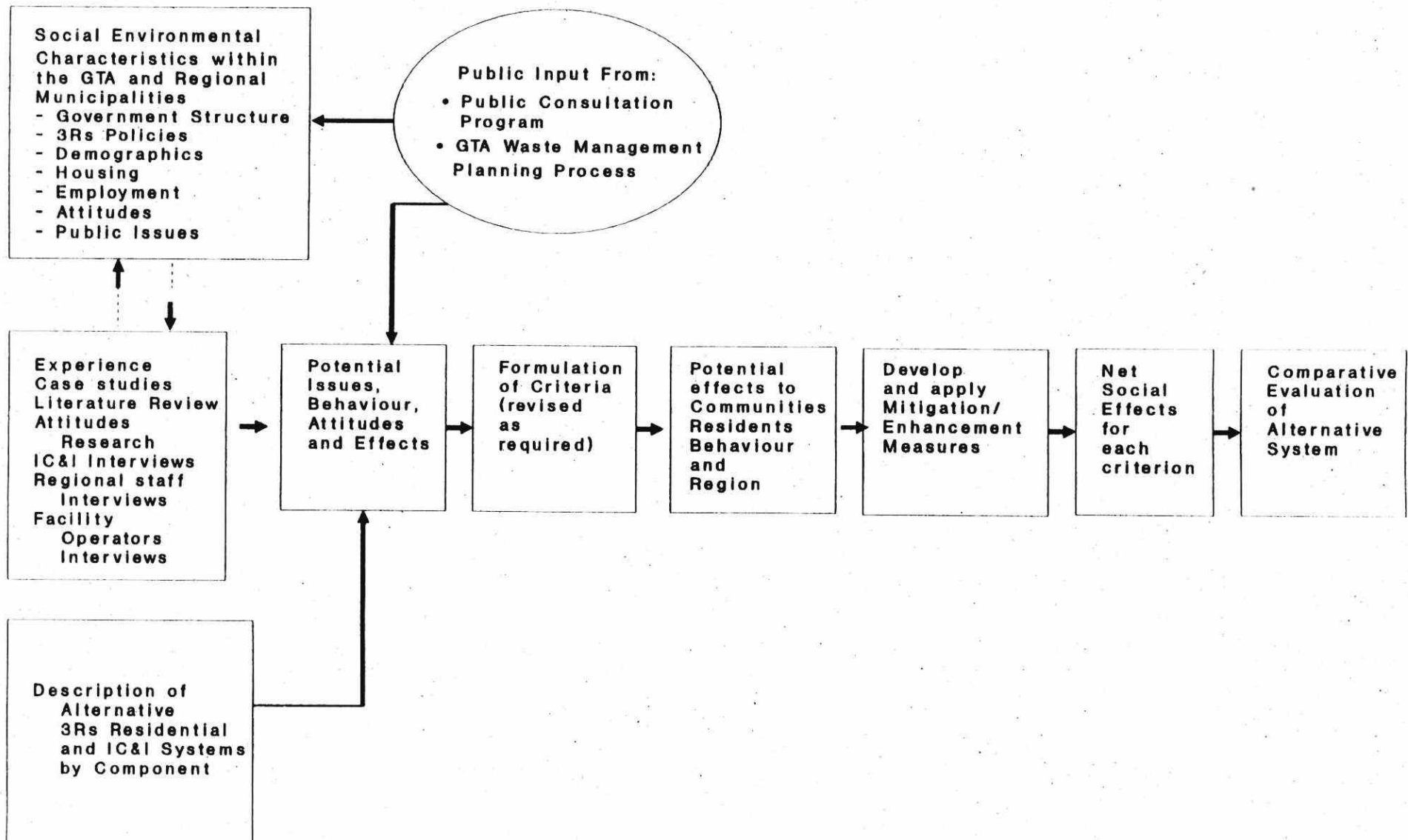
Figure 2.1 illustrates the study process followed to determine the potential social impacts and social acceptability of 3Rs systems in the GTA. The process was based on social impact assessment processes used for facility assessments and for conceptual programs and plans (e.g., IWA, June, 1992; Ontario Hydro, 1988; 1990; and n.d.). This analysis was conducted in two phases.

2.1.1 Phase One

In the first phase, two primary activities were undertaken: 1) Data were gathered to describe resident and IC&I attitudes to 3Rs components; and, 2) social assessment criteria and indicators were formulated to guide the net effects assessment.

The data collected to describe the social environment included: population, housing, demographic and employment data; the general characteristics and views of potentially affected people and communities in the GTA; the general vulnerability/sensitivity of residents,

FIGURE 2.1
GTA 3Rs ANALYSIS SOCIAL IMPACT ASSESSMENT PROCESS



employees and businesses to 3Rs systems components; and, the attitudes and perceptions of the general public, institutions and commercial and industry operators relevant to the various 3Rs components.

Based on data gathered, a description of the GTA was prepared. This included current and projected population; demographic characteristics; housing and employment; resident, municipal and IC&I attitudes and behaviour to 3Rs; and, public issues and concerns with 3Rs in the GTA.

The analysis assessed: **Potential Local Community Impacts** on residents, special/sensitive groups, communities and community features and businesses; and, **Potential for Broad Social Impacts** related to lifestyle changes, employment, economic development and effects on institutions, commercial enterprises and industries. Because not all social effects will be of the same magnitude or occur in the same area, the assessment also considered the **Distribution of the Social Costs and Benefits** in the study area as a result of the implementation of each of the 3Rs systems and the equitable Distribution of Social Costs and Benefits on industry and population groups, lifestyle and future generations.

2.1.2 Phase Two

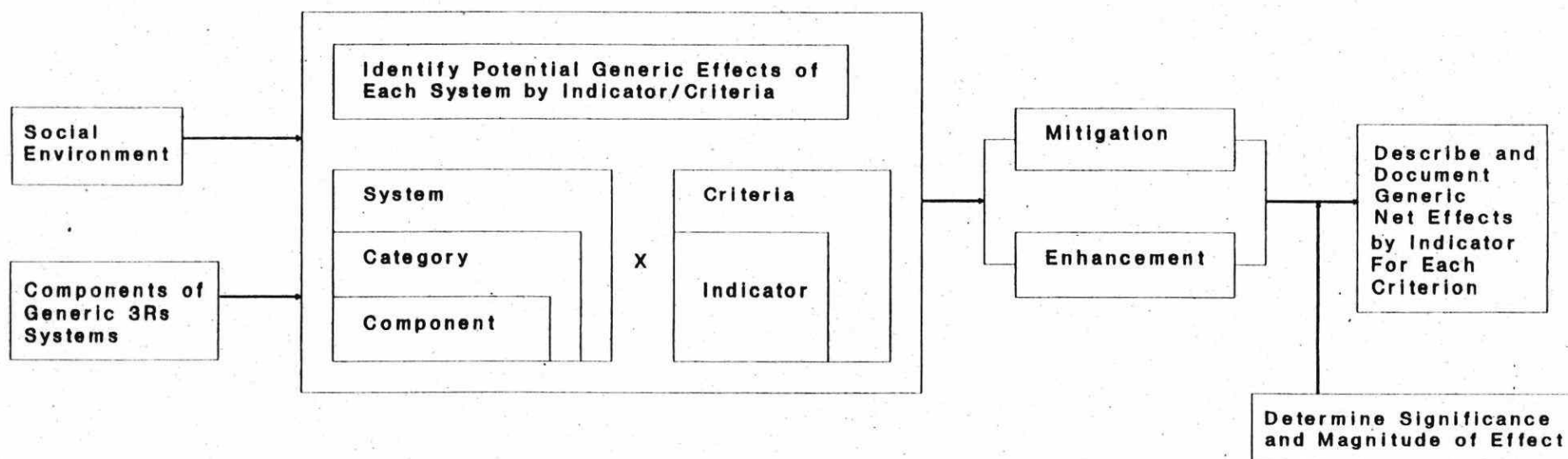
Phase Two involved a two-step analysis of residential and IC&I 3Rs systems: 1) a generic net effects analysis of the residential 3Rs systems in the GTA; and, 2) a regional net effects analysis for the Residential systems for each region and for the IC&I 3Rs systems GTA-wide.

Figure 2.2 outlines step one of this analysis: the identification of generic net effects for the alternative residential system components at the GTA level. At the end of this phase the potential generic effects of each component were listed. For example, what are the potential generic social effects of a materials recovery facility? The generic analysis is based on a comprehensive set of 3Rs components for the six residential 3Rs systems:

- System 1 (Existing)
- System 2 (Existing/Committed)
- System 3 (Direct Cost)
- System 4 (Expanded Blue Box)
- System 5 (Wet/Dry)
- System 6 (Mixed Waste Processing)

The generic analysis is necessary because it identifies the full and comprehensive range of effects, mitigation measures and net effects which might apply to any region within the Greater Toronto Area, from the implementation of 3Rs systems components.

FIGURE 2.2
GTA 3Rs ANALYSIS SOCIAL ENVIRONMENT ASSESSMENT
GENERIC NET EFFECTS ANALYSIS



The generic analysis also addresses whether the effects are likely to be local (i.e., affecting one community/neighbourhood) or whether they are likely to have region-wide broad social effects. For example, 3Rs facilities (e.g., MRFs and composting facilities) may have noise, dust, odour, litter and truck traffic effects for local residents and the local community/neighbourhood. 3Rs programs, on the other hand, can have a broader influence on the attitudes and behaviour of residents and employees in a region and can require or lead to lifestyle changes. 3Rs programs can also encourage people to change their purchasing or waste management behaviour.

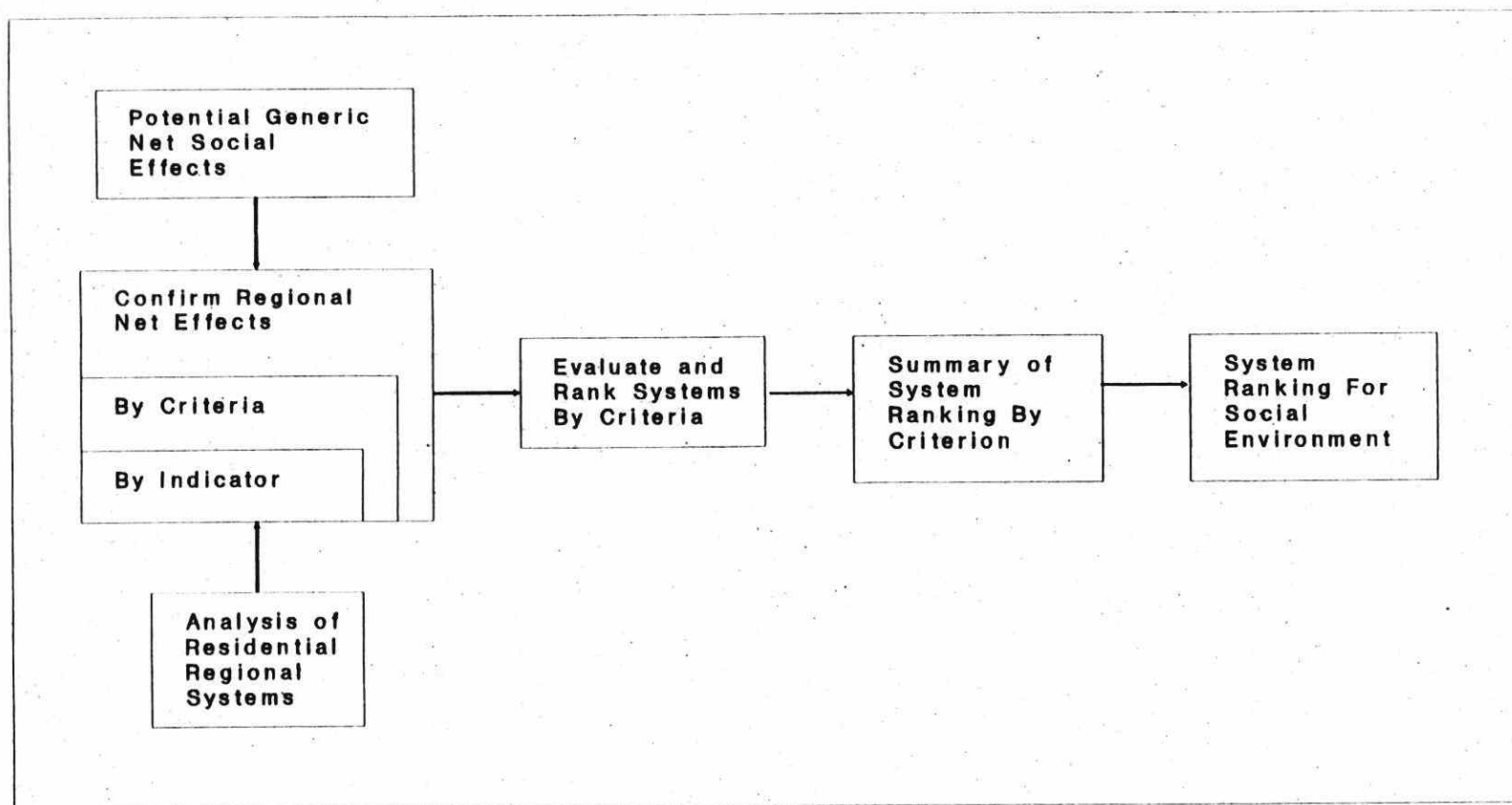
In this first step, general mitigation and enhancement measures were developed for the types of generic potential social effects identified to avoid, eliminate or minimize the negative effects and, where feasible, to enhance the positive effects. These measures were assumed to be implemented by the appropriate party(ies). At this point the potential social net effects for each 3Rs component for each system were determined. Where possible, judgements were made on the significance and magnitude of the effects, and on whether or not the effects may be reduced/lessened through mitigation measures.

Some of the net effects identified at the generic level were seen to be minor (after mitigation) and were not carried forward to the Net Effects Tables for each regional analysis. Where the magnitude of the effect was unknown, the net effect was carried forward to the regional analysis. In many cases, the magnitude of the effect was difficult to determine because the data was unattainable at the level of detail required. In other cases, mitigative measures may reduce the effects but not eliminate them. The potential effects described in the Net Effects Tables may be significant and may occur throughout the life of the system. These were carried forward to the analysis of the residential regional systems. The analysis did not address the effects of the systems in specific lower tier municipalities.

In the second step of the Phase Two analysis (see Figure 2.3), Residential 3Rs Systems Net Effects Tables were produced for Durham, Metro Toronto, York and Peel, by modifying the generic net effects analysis to take into account, the specific regional systems and their respective components and the regional demographic, housing and employment characteristics. Halton Region was not analyzed as it is not part of the IWA landfill siting process.

The net effects of the 3Rs residential systems on employment and economic development and information on tax increase per household were available at the regional level. In these cases, they were incorporated directly into the regional net effects analysis and were not addressed explicitly in the generic net effects analysis. This analysis has used the direct employment effects attributable to each region. This has included direct construction employment and direct operational employment in each region. Indirect induced employment and economic effects have not been included in this analysis.

FIGURE 2.3
GTA 3Rs ANALYSIS
REGIONAL AND IC&I NET EFFECTS EVALUATION



Net Effects were identified for the IC&I systems on a GTA wide basis. Data was gathered on the IC&I sector based on case study analysis, a review of the literature, interviews with IC&I sector association representatives, facility operator interviews and focus group research. Alternative IC&I systems were then assessed by component and potential net effects (after mitigation) were identified. The six IC&I 3Rs systems are:

- System 1 (Existing)
- System 2 (Existing/Committed)
- System 3 (Extended 3Rs Regulations)
- System 4 (Expanded 3Rs Regulations)
- System 5 (Expanded 3Rs Regulations with Organics)
- System 6 (No Unprocessed Waste to Landfill)

The system components for both the residential and IC&I systems, noted above, are found in Schedule A. Components italicized in the Existing and Existing/Committed Systems are those components which must be added to provide the same level of 3Rs service throughout the study period (to accommodate projected population increases). Components italicized in Systems 3-6, are the components which have been added to the Existing/Committed System which is the base for systems development.

The systems were evaluated and ranked on a criterion by criterion basis and summary tables were prepared. The systems were then ranked from a social perspective based on the criterion rankings.

The analytical method and techniques are described in more detail in the following sections.

2.2 Scoping Resident and IC&I Attitudes and Behaviour, and Potential Social Effects

Understanding how residents, municipalities and the IC&I sector will respond to 3Rs components is an important part of analyzing the social effects of systems and whether alternative systems will work. The analysis of existing and potential resident and IC&I behaviour and attitudes, and of the potential social effects, was based on data obtained from: various secondary sources including Statistics Canada, published population projections and a literature review; case study analysis; review of existing attitudinal research; a review of public concerns and issues identified through the GTA 3Rs Analysis Public Consultation Program and other waste management projects in the GTA; IC&I association, municipal and facility operator interviews; and, IC&I Focus Group research.

This supporting research focused on a variety of municipal and IC&I waste management

systems and provided valuable insight into their social effects and the attitudes and behaviour of people and organizations, in response to these systems.

Potential Social Effects

The implementation of any waste management system may have a variety of positive and negative social effects. While the social effects of some waste management systems such as the Blue Box program are relatively well-known, those of more comprehensive 3Rs systems such as "wet-dry" systems have not been evaluated in detail. The background research assisted in scoping the types of social effects that may occur from the implementation of the 3Rs systems.

Research and professional judgement suggest that there are likely to be local community effects due to the construction and operation of 3Rs management facilities. There may be some significant social effects associated with some processing facilities (e.g., vermin associated with composting facilities), while other facilities dedicated to only dry recyclables may have fewer social effects (possibly limited to noise and traffic effects). Mixed waste and centralized composting facilities are likely to have more significant social effects (e.g., additional costs, odour and vermin effects on neighbours). For households, there are likely to be a variety of potential social effects associated with some 3Rs alternatives, such as additional costs, odour, litter and traffic effects.

There will also be broader social effects from the facilities, programs and processes on the lifestyle of residents and on the regional economic and employment base. There also are likely to be distributional effects relating to the issue of "who benefits and who pays?"

Some of the residential 3Rs systems support or encourage a change in individual 3Rs behaviours because they require people to undertake certain actions (e.g., greater source separation and recycling) and/or minimize the opportunities for engaging in behaviours not supportive of the 3Rs. For example the adoption of the Blue Box has required behavioural change across Ontario.

The systems favouring or supporting individual behavioural change may also do better or worse addressing the goal of sustainable development:

"to ensure that [development] meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission of Environment and Development, 1987, p.8).

Meeting this goal will require the current generation to learn to adopt a lifestyle committed to a wiser use of resources, primarily through reducing consumption levels. And, it is as

individuals or households that we make the vast majority of our consumer decisions, rather than as communities. Thus some 3Rs activities may pass more or less burden on to future generations.

Reduction has been placed at the top of the 3Rs hierarchy by the Province of Ontario. However, because the behavioural change required for reduction may be more difficult than for reuse and recycling (De Young, 1993b), motivating individuals to consume less and reduce waste at source becomes central to the goal of sustainable development. The "primacy of individual behaviour and responsibility" has driven a good deal of the conservation behaviour research over the past several years, i.e., it has focused on ways of changing individual behaviour in order to reduce the consumption of material goods and the generation of waste.

There is evidence in the literature that programs and processes which require individual responsibility and accountability have proven effective in bringing about, at least for the short term, improvements in 3Rs activities (e.g., Biocycle, 1990b). There is also evidence of a motivational dynamic at work, in which the merits of individual actions "making a difference", once internalized, can be an important behavioural motivator (e.g., De Young et al., 1991).

Social Acceptability

The long-term success of residential and IC&I 3Rs programs will be based to a great extent on the attitudes and ultimately the behaviour of residents and institutions, commercial operators and industry. To be successful, the various 3Rs components will have to be socially acceptable. This research supports the analysis of the various components of the 3Rs systems by providing information on such issues as: who tends to participate; why people and businesses do or do not participate; how greater participation may be achieved; and, the willingness to pay for various 3Rs initiatives.

2.3 Social Impact Assessment Criteria

The social criteria used to evaluate the effects of 3Rs systems over a 20 year period are different from those used to evaluate a site specific activity such as a landfill. A typical 3Rs system may consist of public and private facilities, public and private programs, regulations, incentives, and educational/promotion activities. Furthermore, there may be little or no data on site-specific locations. Therefore, the social criteria chosen as a bases for the analysis have to address both the broad societal considerations as well as siting effects without a site-specific context.

The selection of the social criteria for this evaluation was influenced by:

- The goals of the environmental assessment.
- The types of 3Rs system components to be evaluated.
- The research on resident and public issues and concerns regarding 3Rs programs and components.
- Social criteria presented before other EA hearings.
- Experience with and professional knowledge of environmental assessments and community impact management of facilities, programs and plans.

It is expected that all of the alternative 3Rs systems will offer a range of potential social benefits, including changes in lifestyle/behaviours and greater consideration for future environmental health. However, some systems may offer greater or lesser potential benefit than other systems. It is these differences that are the primary focus of this social impact assessment.

The social impact and social acceptability assessment and evaluation criteria, indicators and rationale were developed based on the study team's understanding of the issues and scope of the overall study. The criteria and indicators (including the definition and rationale for each) used to assess the components of each of the 3Rs systems options are presented in Table 2.1., and further discussed in Section 4.3. The Social Impact Criteria Group contains three criteria: (1) Potential Local Community Impacts; (2) Potential for Broad Social Impacts; and (3) Distribution of Social Costs and Benefits. The Social Acceptability Criterion provides input to the Service Discipline based on the potential resident and IC&I sector response to the 3Rs systems.

2.4 Data Sources and Method of Analysis

Phase One of the study involved an iterative process of data collection and the formulation of social criteria and indicators to guide the study process. As more data were collected and as refinements were made in the overall study approach, the social criteria and indicators were refined.

The data collected was used to describe the GTA and each of the Regions. Data applied to support the Social Analysis were also collected on attitudes, behaviour and social effects relating to other jurisdictions. The data sources and research methodologies and techniques used are discussed in detail in Sections 2.4.1 to 2.4.13.

TABLE 2.1
SOCIAL ASSESSMENT CRITERIA AND INDICATORS

Criteria	Indicator	Definition	Rationale
IMPACT			
Social			
Potential Local Community Impacts	<ul style="list-style-type: none"> · Potential effects on residents · Potential effects on special/sensitive groups · Potential effects on communities · Potential effects on community features and businesses 	Projects, programs and processes can lead to positive and negatives changes in the lives of people, in their businesses and in their communities. Some components of the system, particularly facilities, could create negative impacts on nearby communities, people and businesses. This criterion measures the effect of change on individuals, groups of people, communities and businesses. The alternative systems will be compared on the basis of the potential effects on residents, special/sensitive groups, communities and community features and businesses. Effects on community features considers cultural heritage resources. Effects on communities are included to address potential cumulative local social effects.	Some of the 3Rs systems contain public or private facilities, programs and processes which may create local community/neighbourhood impacts. Other programs, while leading to environmental benefit and social responsibility, may be considered by some to be disruptive to their day-to-day activities.

Criteria	Indicator	Definition	Rationale
Potential for Broad Social Impact	<ul style="list-style-type: none"> · Potential for lifestyle changes · Potential effect on employment · Potential effect on economic development · Potential effect on institutions, commercial enterprises and industry 	<p>This criterion focuses on regional employment, economic development, and lifestyle changes initiated by the 3Rs systems. Changes may be required or may occur in the way residents, government, industry, institutions and agencies behave with respect to the 3Rs. The alternative systems will be compared on the basis of potential for positive lifestyle change, direct employment and economic development effects and effects on institutions and businesses.</p>	<p>Broad social impact considerations will address the potential positive and negative effects on the region. The 3Rs systems may affect the way residents, institutions and businesses behave. And, the behaviour of government, industry, agencies and associations can affect the level and type of 3Rs service possible. Each 3Rs system is likely to have direct effects on employment, economic development and lifestyle. Systems which promote changes in lifestyle which support or encourage greater longer term reduction, reuse and recycling and greater diversion of waste compare more favourably.</p>

Criteria	Indicator	Definition	Rationale
Distribution of Social Costs and Benefits	<ul style="list-style-type: none"> · Distribution of socio-economic effects on industry and population groups · Distribution of lifestyle effects · Potential future generation effects of system 	<p>This criterion considers the distribution of socio-economic costs and benefits of the alternative 3Rs systems among population groups and generations.</p> <p>Various system alternatives will grant different levels of benefits to specific businesses and user groups, while introducing different levels of negative effect to others. The alternative systems will be evaluated on the basis of the types of social costs and benefits that may occur and who may be affected.</p>	<p>The social costs and benefits of the alternative 3Rs systems should be evaluated to determine if certain groups bear a greater share of the social costs. Ideally, it is preferable that those who bear the social costs also share equitably in the benefits. The social costs and benefits to future generations should also be addressed.</p>
SERVICE			
Social Acceptability	<ul style="list-style-type: none"> · Participation in 3Rs by: <ul style="list-style-type: none"> - individuals - municipalities - IC&I sector - special/sensitive groups · Attitudes and perceptions toward 3Rs activities · Willingness to pay 	<p>This factor addresses the likelihood of success of an alternative based on current reasons for patterns of participation and on changing attitudes and perceptions toward 3Rs activities over the time horizon of the study.</p> <p>Social acceptance will be considered on a regional and GTA wide basis.</p>	<p>Residents, municipalities and the IC&I sector must accept the 3Rs system for it to become fully operational. Preferable systems are those that have a high potential for being socially accepted. The criterion provides input to the evaluation of the level of service provided by the system based on the potential behaviour or social response.</p>

Data Sources

The social assessment and the social acceptability evaluation required the assembly and application of the data gathered through the methods and techniques described above, augmented by the information provided by the study team on costs, municipal finance and natural environment effects. Table 2.2 lists the sources of data used in the social analysis and social acceptability evaluation.

For the IC&I Sector, the data collection (literature review, case studies, interviews and focus group research) focused on the major waste generator sectors identified by RIS for the Greater Toronto Area.

Data verification for the Social Environment research consisted mainly of collecting data from primary and secondary sources and providing summaries to, and obtaining verification from the appropriate municipal, company and association representatives.

Demographic, Housing and Employment Research

Data verification for the demographic, housing and employment research consisted of providing the completed statistical data for review to those responsible for the data in Metro Toronto, each of the Regional Municipalities and the Office of the Greater Toronto Area. The data was revised where necessary based on comments received. Data verification for the case study research and all interviews consisted of providing the completed documentation of the interviews to the contact person(s) for verification.

2.4.1 Demographic Methodology

Demographic, housing, and employment information was used in the GTA 3Rs Analysis for three purposes: to forecast future waste generation for use in the Service assessment; to assess how future social characteristics will influence the achievement of waste diversion efforts; and, to provide a basis for the assessment of potential social effects in each Region and the GTA.

Overall, data for the GTA 3Rs Analysis was derived from an examination and compilation of data from: The Office for the Greater Toronto Area (OGTA), Metro Toronto and the Regional Municipalities, Statistics Canada, Ministry of Finance, Regional Assessment Offices and original research.

TABLE 2.2
SOCIAL ENVIRONMENT DATA SOURCES

Data Requirement/Assessment Criteria	Data Source
Demographic, Housing and Employment	Statistics Canada, 1981, 1986, 1991 Ministry of Finance Regional Assessment Offices Office of the Greater Toronto Area Metro Toronto and Regional Municipalities of Durham, York, Peel and Halton Planning staff interviews
Potential Local Community Impacts Potential Effects on Residents Potential Effects on Special & Sensitive Groups Potential Effects on Communities Potential Effects on Community Features and Businesses	Regional Staff Interviews Facility Operator Interviews Case Study Research Literature Review Existing Public Attitude Research (including public opinion surveys, focus group research)
Broad Social Impacts Potential for Lifestyle Changes Potential Effects on Employment Potential Effects on Economic Development Potential Effects on Institutions, Commercial Enterprises and Industry	Regional Staff Interviews Facility Operator Interviews Case Study Research Literature Review IC&I Interviews & Focus Group research Public Comments on 3Rs regulations, waste management processes, etc. Existing Public Attitude Research (including public opinion surveys, focus group research) Statistics Canada, 1991
Distribution of Social effects Potential for Lifestyle Effects Potential for Social Effects on Industry and Population Groups Potential Future Generation Effects of System	Regional Staff and Facility Operator Interviews Case Study Research and Literature Review IC&I Interviews & Focus Group research Public Comments on 3Rs regulations, waste management processes, etc. Existing Public Attitude Research (including public opinion surveys, focus group research)
Social Acceptability Participation Attitudes and Perceptions Willingness to Pay	Existing Public Attitude Research (including public opinion surveys, focus group research) Case Study Research and Literature Review Facility Operator Interviews IC&I Interviews & Focus Group research Public Comments on 3Rs regulations, waste management processes, etc. Tax increases per household from Municipal Finance discipline

Demographic information was used in the GTA 3Rs Analysis to determine the current population characteristics of each Region and how the population is changing. Such information assists in determining, for example, whether residents are generally older and perhaps less able to engage in strenuous 3Rs activities, or younger and possibly more enthusiastic about ensuring that their household is involved in waste diversion activities.

Lifestyle and cultural information helps to determine whether trends in family characteristics or the ability to pay will encourage or hinder waste diversion activities in each Region. Cultural information, such as the language spoken in the home, is important in determining strategies for the mitigation of potential effects through the enhancement of educational and promotional material and in identifying potential implementation barriers (Hager, L.B., 1992; Bagby, Diangson and Patterson, 1992). This demographic information was used in the identification of potential effects and recommended mitigation/enhancement measures to overcome the barriers (Schedule F).

Municipal assessment and Statistics Canada Census data is the most accurate data available and has been used for historical and current population levels (Table 3.1). Estimates of future population and employment levels are based on data provided by the Office of the Greater Toronto Area (Hemson/Coopers, 1993), the planning departments of Metro Toronto and the Regional Municipalities of Durham, York, Peel and Halton, and 1991 Census data provided by Statistics Canada. Telephone or personal interviews were conducted with staff responsible for population and employment projections. Reports were gathered and analyzed for consistency and approach. Additional data including population levels and projections were gathered from each Region and were supported by contact documentation forms and written confirmation from representatives of each of the Regions.

The following data was used in estimating future population, housing and employment. The base data used for the population projections (Table 3.3) was based on a series of discussions with the Office of the Greater Toronto Area, each of the Regions, the Ministry of Finance and Statistics Canada. The 1993 report, *"The Outlook for Population and Employment in the GTA"* by Hemson Consulting Limited and the Coopers and Lybrand Consulting Group Ltd. was the major data source as these population levels were accepted by the Regions and the OGTA. Where OGTA, Metro Toronto and Regional Municipal projections differ, Regional municipal population projections based on data were assessed and selected. The following represents the data sources from each Region. Interpolation techniques were used to fill in the intervening years.

Durham Region

Future population levels in Durham Region are derived from the Region of Durham Official Plan approved by the Ministry of Municipal Affairs in 1993. Durham Region did not support

the OGTA Scenario 1 projections for population or employment. Instead, the Region (Commissioner's Report to Planning Committee - Report 93-P-128, 1993) cited the approval of the Official Plan based on a population target of 970,000 persons for the Region for the year 2021 and an employment target of 485,000. The Office of the Greater Toronto Area confirmed that this is an acceptable target. Based on the interpolation, this would yield a 2015 population figure of 816,165 people.

Metro Toronto

Metro Toronto accepted the OGTA Scenario 1 population projection of 2,700,000 for the year 2021. This reflects a Metro-centred growth pattern. On the basis of the interpolation, this would reflect a population level of 2,602,830 for 2015.

York Region

York Region adopted independent population projections. The York Region 2021 projection of 1,100,000 is slightly lower than the OGTA Scenario 1, projection of 1,110,000 for the year 2021. On the basis of the interpolation of the York Region projection, this would represent a population level of 997,161 for 2015.

Peel Region

Peel Region has accepted the OGTA Scenario 1 population projections. This reflects a population projection of 1,260,000 people in 2021 and, on the basis of the interpolation, 1,192,798 people in the year 2015. Peel Region initially established 1991 population levels of 744,000. However, Peel Region has since adopted a 1991 population level of 730,000, consistent with Scenario 1. Rather than use the rounded number, the Statistics Canada 1991 population level of 732,798 was used.

Halton Region

Halton Region Council accepted the OGTA Scenario 1 population projection of 650,000 for the year 2021. On the basis of the interpolation, Halton's projection would represent a population level of 575,084 for 2015.

Cultural and Lifestyle Trends

How cultural characteristics and lifestyle trends in the Greater Toronto Area will change over the next twenty-five years is highly dependent on global trends, Canadian policies toward social development, immigration and inter-provincial relations, and policies and trends in the Province of Ontario. Given these factors, no analysis and projection of trends can predict the

future with absolute certainty. However, the potential lifestyles and cultural characteristics of residents in the GTA could have a significant impact on the efficacy of GTA 3Rs initiatives. In order to identify and assess changes in lifestyle and cultural characteristics for the GTA 3Rs Analysis to the year 2015, the analysis drew upon several studies (Canadian Urban Institute, 1991a & 1991b; Clayton, 1991; Hemson, 1989; Hemson/Coopers, 1993) of the changing behaviour and cultural characteristics in the GTA.

2.4.2 Housing Methodology

Housing data is a significant factor in determining whether differing 3Rs systems will be effective given differing mixes of apartments, townhouses, rental units, etc. in each Region. In addition, opportunities for waste diversion will differ depending on different dwelling types and tenure. For example, GTA 3Rs waste diversion scenarios must account for varying percentages of multi-family housing where most tenants do not pay municipal taxes directly, do not have backyards for composting opportunities and do not have curb-side collection.

Census housing data is used predominantly as a data source. However, it is supplemented by assessment data, CMHC Survey of Markets reports (CMHC, 1993b) and local planning department estimates where census data is not complete or available. Hemson/Coopers (1993) population and person per household projections were also adopted. Important in this analysis is the Scenario 1 target of significant population and household increases in Metro Toronto.

Table 3.3, "Population Projections by Region" was used as the basic data for the development of household projections as Metro and each of the Regions have adopted the population projections.

Total household levels for each Region to the year 2021 were developed by dividing the total population by the changes in household size projected to the year 2021 by Hemson/Coopers (1993, p.63). As the Hemson/Coopers household size projections were rounded to one decimal (2.6 pph.), and as the 1991 calculation of households resulted in fewer homes than were actually counted by Statistics Canada (1991), household size was adjusted to reflect the actual houses counted in 1991 (i.e., 2.63). Interpolation techniques were then used to adjust the persons per household between 1991 and the Hemson/Coopers' 2001 estimate of 2.5 pph. The remaining persons per household were then identified based on the accepted Hemson/Coopers' household projections. Table 3-9 "Average Household Size By Region" was then accepted as the second set of basic data.

Total households were then calculated for each Region. Households for York Region for 1991-1993 were accepted as provided by the York Region Planning Department (Bottomley,

P., 1993).

Households by type were then calculated using the 1989 Hemson/Clayton estimate of proportions of housing types and projecting them to the year 2021. These estimates were converted into percentages and divided into the total housing projected for that year. Table 3.11 was used as an acceptable proportional breakdown of unit types. Low rise apartments (five units and below) were allocated to the Semi/Row/Townhouse category. As the base table only uses five year cohorts (1996, 2001, 2006 etc.), interpolation techniques were used to estimate the household types based on total households related to the revised Scenario 1 population forecasts.

The resulting proportion of household types for each Region was then examined to reflect basic Scenario 1 assumptions. To reflect the lack of likelihood of Metro Toronto experiencing a significant rise in single detached homes, it was assumed that there would be no single family homes built in Metro Toronto after 2006. The number of single detached homes was projected to remain stable to the year 2015 with multiple family and high-rise housing increasing proportionately. The resulting data is Table 3.13, "Household Projections by Type."

2.4.3 Employment Methodology

As Industrial, Commercial and Institutional (IC&I) facilities in the GTA are an important part of waste diversion efforts, information about employment assists in locating the main centres of IC&I employment and expected areas and types of employment growth in the GTA. In addition, the industrial and commercial base is changing in the GTA, and GTA 3Rs waste diversion scenarios must reflect the anticipated changes. For example, waste diversion programs must acknowledge trends in the GTA such as the decline of industrial or manufacturing activities and expansion of the office and service sectors.

Two sets of data are relevant: employment data - numbers and occupations of people by their place of work location; and, labour force data - the numbers and occupations of people by their place of residence.

Current 1991 employment levels within all Regions were derived from a special run of 1991 Statistics Canada data based on SIC (1980 codes) for upper and lower tier municipalities. Employment projections by Region are based on projections completed by the OGTA (Nov. 1993) except for Durham. In Durham, employment is presented as 50 percent of population levels.

Consistent with Scenario 1, employment trends assume that Metro will reverse current trends

and achieve significant increases in employment over the planning period. On the basis of this assumption, Table 3.16 "Employment Projections by Region" was developed using the OGTA projections for 2011 and 2021 (Letter, E.A. McLaren, OGTA, to J.A. Gartner, Metro Toronto, Nov. 19, 1993). Intervening years were interpolated between 1991 Census employment, 2011 and 2021 projections.

Employment trends by Standard Industrial Classification (SIC 1980) for the GTA 1991-2015 were derived by using trend line extrapolations from 1981 Census Canada data to 1991. Trend lines were continued to 2015 for each of the SIC classifications. The trends were graphed to determine whether they represented a realistic expectation of future trends. Where problems occurred, for example, where the trend in manufacturing would create an absence of manufacturing in the GTA, the following decision rule was applied -no employment in the GTA in 2015 could exceed the range of highest or lowest employment levels currently achieved by any regional municipality. Data was then applied as represented on Figure 3.2. The data was presented in numerical form on Table 3.18.

2.4.4 Regional Municipal Staff Interviews

Interviews were held in April, 1993 with Regional Municipal staff throughout the GTA to obtain their views on the possible obstacles to, and potential for, increased 3Rs diversion in their Regions. Appropriate staff (e.g., senior planners, waste management commissioners, waste management program administrators) in the five Regions were identified (in consultation with the study team) as being the most knowledgeable staff in the Region on 3Rs, or as being the most familiar with the GTA 3Rs Analysis. A complete list of contacts and a summary of the interview information is presented in Schedule C.

The thirty minute telephone interview consisted of eighteen questions concerning issues such as: existing, possible and/or pending regional 3Rs policies; existing, possible and/or pending lower tier municipal 3Rs policies; and, perceived and/or documented 3Rs attitudes and behaviours in the residential and IC&I sectors. Certain key issues have been highlighted in Section 3.8.

2.4.5 Industrial, Commercial & Institutional Sector Interviews

Interviews were held with representatives of the IC&I Sector throughout the GTA to obtain their views on the possible barriers to, and potential for increased 3Rs diversion. A complete list of contacts and a summary of the interview information is presented in Schedule D. Certain key issues have been highlighted in Section 3.9.

The IC&I sub-sectors have a different nature of operations. The Institutional Sector includes schools, universities, hospitals, and prisons. The Commercial Sector includes hotels, restaurants, retail stores, and offices. The Industrial Sector includes factories, light industry, warehouses, and construction (Resource Integration Systems, 1991a). Appropriate IC&I associations involved in 3Rs programs/activities were selected in consultation with the study team.

IC&I association interviews were conducted in April and May, 1993. The IC&I associations interviewed were identified based on an analysis of IC&I waste generators in the Greater Vancouver Regional Districts (GVRD) and the GTA. The forty-five minute telephone interview consisted of twenty-three questions concerning issues such as: development of and participation in waste management initiatives of individual associations and parent associations; obstacles to and opportunities for increased waste diversion in the IC&I sector and implementation of 3Rs programs; and regulations that have affected member associations (see Schedule D).

2.4.6 IC&I Focus Group Research

The purpose of the Focus Group research was to obtain additional information on the IC&I sectors attitudes and perceptions related to the array of IC&I 3Rs systems considered in the GTA 3Rs Analysis.

The specific objective of the research was to assess the impact of the array of IC&I 3Rs systems on a range of IC&I organizations based on the following questions:

- What effect could each system have on IC&I operators represented by their particular organization?
- Can the individual systems be implemented? What barriers are envisaged?
- What are the perceived benefits and problems in implementing the systems?
- What are the potential economic impacts of the system?
- Would the systems favour the competition? Are they fair and equitable?

Two focus group sessions were conducted February 22 and 25, 1994, in Toronto. Thirteen recycling coordinators and environmental managers participated, representing the following organizational sectors:

- Education: public school boards, university and community college,
- Healthcare: institutional association,
- Industry environmental association,
- Manufacturer,

- Grocery retail chain,
- Food service association,
- Waste handling/diversion industry associations.

A summary of the Focus Group discussions (Informa Inc., 1994) is presented in Section 3.9.8.

2.4.7 Selected Facility Operator Interviews

Interviews of selected facility operators were required to update the data from the literature review and provide a focus on the types of social effects 3Rs facilities may create.

Interviews were held with a variety of facility operators throughout the GTA and internationally. These included public and private, operating and non-operating and successful and unsuccessful facilities. A complete list of contacts and a summary of the interview information is presented in Schedule E. Key issues are summarized in Sections 3.8 and 3.9.

The interviews were conducted in April, 1993. The thirty minute interviews consisted of nine questions concerning issues such as: present and future 3Rs trends in the residential and the IC&I sectors; behaviours and attitudes pertaining to 3Rs practices in the residential and IC&I sectors; social and/or biophysical impacts and/or effects of facility operations; and, complaints registered because of facility operations.

2.4.8 Case Studies

Case studies were analyzed to identify successful alternative 3Rs options and key 3Rs implementation factors. This involved: identifying and analyzing reasons for successes and lessons learned; identifying potential social effects of 3Rs operations; identifying operating procedures/practices which could cause social effects; and, identifying attitudes and behaviours related to 3Rs components and systems. Each case study was updated in April, 1994 to identify any changes.

Each case study was divided into two sections: a descriptive section of the 3Rs component or system under examination, covering such matters as ownership, method, equipment, performance, documentation and surveys; and, an evaluation section focused on three issues: attitudes, impacts and applicability to the GTA. The descriptive sections can essentially be considered as factual in nature, while the evaluation sections consisted of the opinions of both the correspondents and the researcher. Key issues have been summarized in Sections 3.8 and 3.9. In addition, case studies analyzed in the literature were reviewed.

2.4.9 Literature Review

The purpose of conducting a literature review of 3Rs research was to analyze experiences and draw upon the insights of other jurisdictions, academic researchers, and practitioners in coming to terms with waste management issues.

The review attempted to identify "current" (i.e., published within the last decade) sources of literature on **attitudes, behaviours, opportunities, barriers and issues/concerns** related to the following:

- Consumer and household recycling activities, e.g., distinguishing recyclers from non-recyclers - social and other indicators, factors affecting overall participation rates;
- Backyard and centralized composting;
- Materials Recycling Facilities (MRFs); and,
- Waste management regulations, e.g., mandatory ordinances affecting both the IC&I sector and the general public, direct cost systems, etc.

A "Metroline" computerized bibliographic search of the available literature was undertaken through the Metropolitan Toronto Reference Library. In addition, a search was undertaken at the Research Library of the Recycling Council of Ontario. A number of computerized search indexes were consulted, including: The National Newspaper Index; Enviroline; Canadian Business and Current Affairs; Books In Print; and, Social SciSearch.

The literature review was helpful in identifying reports, articles, surveys, case studies and research studies addressing many waste management issues. These included issues such as: Composting (Backyard & Centralized): Programs, Attitudes, Behaviour; Health Effects (Composting); Recycling Programs, Behaviours, Attitudes; and, IC&I Waste Reduction Programs, Behaviour, Attitudes. Key issues have been highlighted in Sections 3.8 and 3.9.

2.4.10 Attitude Surveys

The literature review included a number of public attitudinal survey and focus group research reports. Generally, the surveys were conducted by private survey groups or consultants on behalf of a government body or organization, with a few being conducted for the private sector. The purposes for conducting the surveys were either to evaluate a specific program or to evaluate general behaviours, participation factors, opinions, etc. The majority of the surveys were telephone interviews. Three others involved mail questionnaires and personal interviews. All of the specific 3Rs surveys reviewed were conducted in Ontario; some were conducted in the GTA. The general "environmental" surveys were national.

Surveys used were those published between 1989 and 1993. As a result, they may reflect the influences of various externalities occurring over this time period. Some of the key influences may have been: economic conditions; waste export to the U.S.; environmental awareness; and, the environment/economy link. This period encompassed a significant change in economic conditions from pre-recession to the beginning of a very sluggish recovery. During this time period there was also a rapid increase in waste export to the United States as a result of increased tipping fees. The heightened awareness of environmental matters of the late 1980s, the perceived landfill crisis and the landfill site search controversies in the GTA and many other municipalities also increased awareness and the perceived importance of the 3Rs. As well, the public has become increasingly aware of environment/economy links.

2.4.11 Review of Public Comments on Waste Management Initiatives

3Rs related comments made to the IWA were reviewed. In addition, information on past GTA and provincial waste management consultations were reviewed to identify issues and concerns related to the 3Rs. These included the following:

- IWA Landfill Site Search Public Consultation Documentation;
- Solid Waste Environmental Assessment Project (SWEAP) Metro Toronto;
- Solid Waste Interim Steering Committee (SWISC) approach to landfill siting and waste management; and,
- Waste Reduction Office Waste Management Initiatives Papers;

2.4.12 Complaint/Compliance Survey of 3Rs Facilities

Complaints registered with the Ministry of the Environment and Energy (MOEE) regarding the operation of a 3Rs facility are kept on file. The preliminary information collected by the MOEE was reviewed to identify if the complaints or non-compliance were related to effects on the social environment. The data did not indicate if mitigative measures were taken with respect to the complaint and, in some cases, who had lodged the complaint. The majority of complaints recorded were for odours from composting facilities.

2.4.13 Input From Consultation Activities

As part of the GTA 3Rs Analysis, a public and agency consultation program was conducted. As discussed in detail within the GTA 3Rs Analysis EA Input document, key consultation activities which were undertaken included: documentation distribution, attendance at IWA Information Centres, meetings with municipal representatives, review of participant's reports and telephone contacts with stakeholders.

Based on these and other activities, data upgrades and revisions to the documentation were made. Appendix A of the EA Input document summarizes comments received and responses to them.

2.4.14 Input From GTA 3Rs Analysis Study Team

The evaluation of other study team members were reviewed (i.e. Service, Cost, Municipal Finance and Natural Environment) and relevant data and findings incorporated into the social environment assessment.

2.5 **Assumptions**

General Study Assumptions

- The study period extends from 1996 to 2015.
- Markets will be available for the recycled materials and compost from source separated compostables.
- Residential waste diversion systems are developed and analyzed separately for each GTA Region. However, because there is no effective waste management boundary for IC&I waste and recyclables (IC&I waste management is not confined by municipal boundaries), IC&I waste diversion systems are developed for the GTA as a whole.
- Regulations identified in the IC&I systems are assumed to be enforced equally throughout the Province and for all systems.
- 3Rs components would be developed in a manner that fulfils the necessary MOEE approvals (e.g., Certificate of Approval).
- The 3Rs systems developed are considered reasonable, represent a range of plausible

diversion approaches and do not necessarily represent the highest possible diversion at all times.

- The mixing and matching of 3Rs components beyond what is done in this report is possible but not assessed due to the large number of possible permutations and combinations.
- The net effects analysis is based on the year 2000, the year in which all systems are assumed to be fully operational.
- The analysis is generic; specific sites/locations for new facilities for each of the systems were neither known nor considered.
- The potential effects of landfill were not considered in the systems net effects.
- The effects of a facility are attributed to the region which uses it.
- All systems were analyzed to the same level of detail.
- It is assumed that larger facilities will be sited to minimize effects (i.e., located in areas most compatible with the facility) through a systematic site selection process.
- It is assumed that mitigation measures identified are readily available and would be implemented effectively.
- The diversion rate estimates were generated for the year 2000 (the year by which the systems were assumed to be fully operational) and for the 20 year cumulative study period. Increases in diversion rates after the year 2000 are attributed to source reduction.
- A combined diversion rate estimate was determined for Metro Toronto and the Region of York. Alternative systems, however, were evaluated separately for these two Regions.
- Only effects directly attributable to the 3Rs systems development and operation were considered.
- For all of the residential 3Rs systems, it is assumed that the system would be designed and managed such that there would not be any increase in the total number of collection vehicle trips in any residential area, or any increase in the net amount of time required to pick up materials.

- The export of waste, for the purposes of this study, was considered disposal.

Social Environment Assumptions

- The systems on which the analysis is based will be applied to an entire region, regardless of the division of responsibility for waste management within the region.
- Provincial waste regulations identified in the IC&I systems will be applied so that there is no economic distortion in the GTA.
- For the IC&I alternative 3Rs systems, it was assumed that there would be an increase in the existing total number of collection vehicle trips and/or the net amount of time required to pick up materials. This increase in collection vehicle requirements would be a direct result of a larger number of IC&I waste generators having to comply with 3Rs Regulations, a larger range of materials being source separated and/or as a result of all wastes being processed prior to disposal.
- Larger businesses, commercial enterprises and institutions in the IC&I sector are better able to adjust to the costs and requirements of regulations than smaller businesses, commercial enterprises and institutions.
- The 3Rs systems developed for this study are not modified to mitigate potential impacts.
- Metro and the Regions will achieve OGTA Scenario 1 population growth and employment targets and/or population targets derived by York and Durham Region.
- 3Rs behaviour and the wise use of resources are beneficial in the short and long term.
- Distributional effects associated with current and future generations are important. The current generation's responsibilities to future generations include: managing our waste in a manner which passes on to the future as few management and financial responsibilities as possible; and, reduces consumption of non-renewable resources.
- The public is willing to accept some inconveniences to help reduce waste and improve the environment.

Uncertainties/Limitations

The social analysis proceeded on the basis of the following uncertainties. The analysis of the residential systems proceeded without the benefit of a comprehensive survey of residents of the GTA or direct public input to the development and ranking of the criteria or to the analysis. Public opinion research conducted previously and public input to the IWA and GTA 3Rs Analysis in the GTA and in other jurisdictions was reviewed, where available, to provide direction on the types of resident attitudes, behaviours and concerns.

The analysis of the IC&I 3Rs systems recognized the following:

- The number and proportion of small businesses in the GTA is unknown, therefore it is difficult to identify the size of individual companies and organizations generating waste which will be affected by the various components of the systems.
- With all six IC&I systems, the increased amounts of regulation may add to the costs of doing business in the GTA. The effects may vary among the IC&I waste generators. Some IC&I generators have incorporated the most comprehensive 3Rs practices but others have not. While it is generally accepted that increased amounts of regulation may add costs, the actual effects on competitiveness are difficult to predict and beyond the scope of this analysis.

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3.0 EXISTING SOCIAL ENVIRONMENT CONDITIONS

The existing social environment of the Greater Toronto Area (GTA) is described through: the analysis of demographic, housing and employment characteristics and trends; a description of residential/municipal attitudes and behaviour relevant to 3Rs; Industrial, Commercial and Institutional Attitudes and Behaviour relevant to 3Rs; and, an outline of the legal, regulatory and policy framework within which GTA 3Rs alternatives would be applied.

3.1 Greater Toronto Area

3.1.1 Description

The Greater Toronto Area (GTA) consists of five regional governments, including Metropolitan Toronto, the Regional Municipalities of Durham, York, Peel and Halton and the 30 area municipalities constituting these regions. It is the most populous urban region in Canada and comprises 41 percent of Ontario's population and 14.7 percent of Canada's population (Canadian Urban Institute, 1991a). The GTA extends over 7,209 square kilometres of land located between Lake Ontario to the south and Lake Simcoe to the north (Figure 3.1). Its population at the end of 1992 is estimated to be 4,312,753 inhabitants. The GTA has experienced considerable growth since the early 1980s and will continue to be the major growth centre of the Province of Ontario over the planning period.

The boundaries of the GTA are political in origin and do not represent any unique geographical or ecological unit. The majority of urban development within the GTA is concentrated along the northern shores of Lake Ontario, with intermittent development in the east, a continuous band of development in the centre and west, and a few smaller centres farther inland, to the north. The remainder of the GTA consists of rural lands. Development in the GTA does not end abruptly at its western limits, but continues onward toward Hamilton-Wentworth, with important linkages to Kitchener-Waterloo and other municipalities.

The 1990 Urban Structure Concepts Study (IBI, 1990a,b,c,d) subdivides the total GTA land area of 1,781,500 ac (720,973 ha) into two broad categories: urbanized land occupying 376,400 ac (152,329 ha) or 21 percent of the GTA; and the residual, which is mostly rural, of 1,405,100 ac (568,644 ha) or 79 percent of the total. The urban lands are further subdivided into 290,000 ac (117,363 ha) of residential and non-industrial lands (16 percent of total GTA and 77 percent of urbanized land) and 86,400 ac (34,966 ha) of industrial lands (5 percent of total GTA and 23 percent of urbanized land). The overall gross urban density (residents plus employees divided by urbanized area) of the GTA in 1988 was 15.4 persons/ac (38.0 persons/ha).

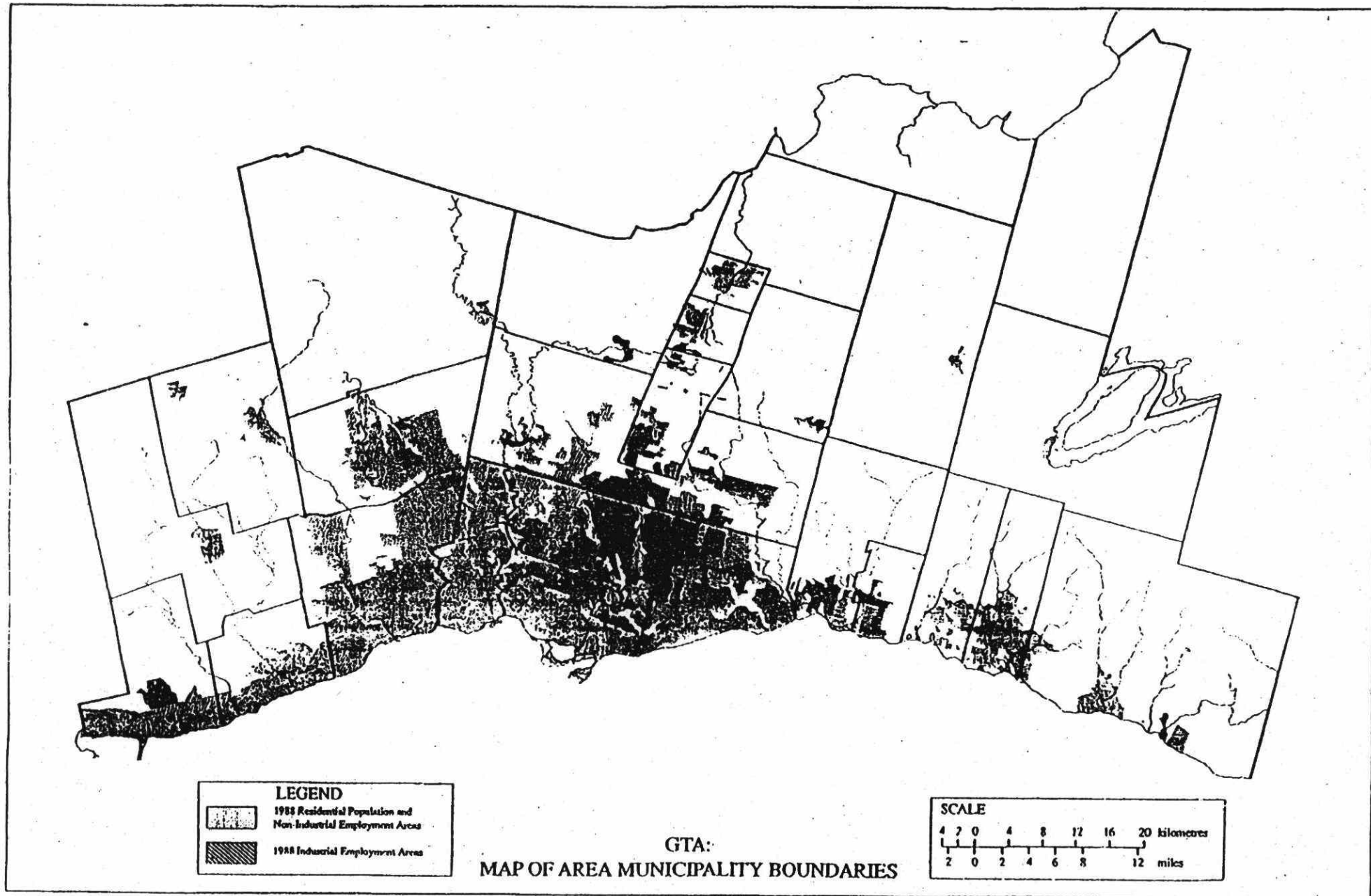


Figure 3.1

3.1.2 Decision-Making Support for the GTA

The GTA is not a legal jurisdiction. Decision-making occurs either at the provincial level or locally through the two-tiered system of regional and area municipalities which constitute the GTA. There are, however, a number of agencies which were created in order to support decision-making within the GTA. These include the following:

Office for the Greater Toronto Area

The Office for the Greater Toronto Area (OGTA) is responsible for coordinating the Ontario government's policies, programs and projects designed to ensure that the Greater Toronto urban area remains environmentally and economically attractive as it manages significant growth. Activities and initiatives carried out by the OGTA usually require the co-operation of several provincial ministries and agencies as well as the five upper-tier regional municipalities and thirty lower-tier area municipalities.

Greater Toronto Coordinating Committee

The Greater Toronto Coordinating Committee (GTCC) is a body of Municipal Chief Administrative Officers established to coordinate information exchanges and research priorities and to generate common data to be used by municipalities and provincial ministries.

Interim Waste Authority

The Interim Waste Authority is a Crown agency with a mandate to establish three long-term landfill sites in the GTA. The three landfill sites will be located as follows: one site in Peel Region to serve Peel; a second site in Durham Region to serve Durham; and, a third site in Metro Toronto or York Region to serve Metro and York. Each landfill is to be designed with sufficient capacity to serve the needs of the residents in its respective area for at least twenty years.

3.1.3 Demographic Characteristics

Demographic data was used in the GTA 3Rs Analysis to determine the current population characteristics of each Region, how the population is changing, and to calculate future waste projections. Demographic information also assists in determining, for example, whether residents are generally older and perhaps less able to engage in strenuous 3Rs activities, or younger and possibly more enthusiastic about ensuring that their household is involved in waste diversion activities.

3.1.3.1 Population

As indicated on Table 3.1, the GTA has a 1991 population of 4,235,756 representing growth of 10.2 percent from 1986. Within the Greater Toronto Area, Metro Toronto has over half of the population at 2,275,771, representing 53.7 percent of the total population with the rest being distributed among the four Regional Municipalities. The next largest population concentration occurs in Peel Region with 732,798 residents and 17.3 percent of the GTA population.

York Region and Durham Region have similar population levels. Halton Region has the smallest population of the area. York, Durham and Halton Regions respectively have 11.9, 9.6 and 7.3 percent of the population of the GTA.

Several recent studies have addressed potential growth and development scenarios in the GTA. These studies were examined in the development of the GTA population, housing and employment projections.

The Greater Toronto Coordinating Committee sponsored Clayton Research Associates Limited to complete population and household projections by ten year cohorts to 2031 (Clayton 1989a; 1989b; 1990; 1991). Hemson Consulting Limited and The Coopers and Lybrand Consulting Group were also sponsored to update the population and employment projections in 1993, based on 1991 Census data (Hemson/Coopers, 1993). The Ministry of Municipal Affairs recommended that Scenario 1 of the Hemson/Coopers report best represents a population growth and distribution that achieves GTA land-use objectives. In November 1993, the Office of the Greater Toronto Area reviewed and updated the target employment distributions in the GTA (McLaren, B.A., 1993).

Clayton's and Hemson/Coopers' estimation of trends are influential in predicting future population and housing characteristics in the GTA. These estimations include:

- lower net migration to the GTA over the longer term;
- the GTA continuing to experience strong growth but at a slower rate than in the past;
- international migration becoming an increasingly important source of growth to the GTA;
- recession related population losses in the GTA due to interprovincial migration (the outflow of population to other Provinces) and intra-provincial migration

(the outflow of people to adjacent regions, e.g., Simcoe County and Waterloo Region);

- as the economy recovers, a moderation of the loss of migrants to other parts of Ontario and other provinces;
- an increasing share of population growth in the regions outside of Metro Toronto.

Based on 1991 Census data, Hemson/Coopers assume a long-term population forecast (Scenario 1) of roughly 6.67 million people in the GTA by 2021. Through the Office of the Greater Toronto Area, Metro Toronto and most Regional Municipalities have accepted the Hemson/Coopers' Scenario 1 projections.

To determine where growth may occur within the GTA, the Greater Toronto Area Coordinating Committee conducted case study analysis of three growth concepts relating to the future of the Greater Toronto Area (IBI Group, 1990a,b,c,d). The Hemson/Coopers' (1993) report for the Office of the Greater Toronto Area also considered potential Regional distributions of population and employment. The IBI case studies reflect three different potential scenarios for future population growth in the GTA: spread, nodal and central. While IBI did not address waste generation, two implications of this case study analysis are important for the projection of social dimensions related to the GTA 3Rs Analysis:

- waste origin assumptions will have to consider that there are significant options for a range and type of housing growth in Metro Toronto through the development and redevelopment of some sites and intensification; and,
- considerable population and housing growth will occur in the four Regional Municipalities over the planning period, thus proportionally more residential waste can be anticipated in these areas.

Population growth in the Toronto Census Metropolitan Area (CMA) is still being driven primarily by immigration although it is currently at 60 percent of the late 1980s level (CMHC, 1993a). As seen on Table 3.2, Clayton Research Associates indicates that Peel and York Regions grew fastest over the last decade. Metro saw a loss of share of population growth.

TABLE 3.1
HISTORIC POPULATION LEVELS: GREATER TORONTO AREA

District	Mun.	1981	1986	1987	1988	1989	1990	1991
Metro Toronto		2,110,973	2,175,900	2,125,520	2,133,559	2,130,855	2,137,204	2,275,771
	East York	99,116	97,051	96,705	96,497	95,662	94,701	102,696
	Etobicoke	296,277	297,389	295,051	293,433	294,958	296,107	309,933
	North York	560,899	551,318	550,678	544,560	542,742	548,040	562,564
	Scarborough	428,264	461,480	461,261	470,406	472,029	470,670	542,598
	Toronto	599,282	612,290	590,215	597,126	594,051	595,074	635,395
	York	132,336	132,673	131,610	131,537	131,413	132,612	140,525
Durham		283,639	326,179	340,570	347,837	385,480	397,540	409,070
	Oshawa	117,519	123,651	124,700	120,904	132,135	133,910	129,344
	Ajax	25,475	36,550	40,085	45,046	49,950	52,825	57,350
	Newcastle	32,229	34,073	36,130	37,769	43,850	45,915	49,479
	Pickering	37,754	48,959	53,055	56,132	62,980	65,315	68,631
	Whitby	36,698	45,819	48,605	49,948	55,310	57,245	61,281
	Brock Twp.	9,259	10,003	10,145	10,082	10,755	10,935	11,057
	Scugog Twp.	13,498	15,229	15,675	15,675	17,230	17,710	17,810
	Uxbridge Twp.	11,207	11,895	12,175	12,281	13,270	13,685	14,090
Halton		250,698	271,389	275,945	284,994	291,600	297,650	313,136
	Burlington	112,940	116,675	117,562	120,098	122,300	124,599	129,575
	Halton Hills	34,507	35,570	34,360	34,189	34,800	35,750	36,816
	Milton	28,090	32,037	30,682	30,115	30,500	30,900	32,075
	Oakville	75,162	87,107	93,341	100,936	104,000	106,500	114,670
Peel		490,730	592,170	636,475	667,445	702,450	724,530	732,798
	Brampton	149,030	188,500	204,625	214,265	227,710	232,465	234,445
	Mississauga	315,055	374,055	399,835	419,700	440,500	457,275	463,388
	Caledon	26,645	29,665	32,015	33,480	34,240	34,790	34,965
York		252,053	350,602	386,103	409,292	442,022	466,791	504,981
	Vaughan	29,674	65,058	80,012	88,475	97,685	103,072	111,359
	Aurora	16,267	20,905	23,586	24,545	26,426	27,778	29,454
	East	12,565	14,644	16,115	16,513	17,199	17,683	18,367
	Gwillimbury							
	Georgina	20,111	22,486	22,372	22,587	24,360	26,675	29,746
	Markham	77,037	114,597	121,950	129,501	136,924	141,880	153,811
	Newmarket	29,753	34,923	36,575	37,277	38,785	40,566	45,474
	Richmond Hill	37,778	46,766	52,103	57,082	66,456	73,739	80,142
	Whitchurch-	13,557	15,135	17,007	16,705	16,963	17,683	18,357
	Stouffville							
	King Twp.	15,188	15,951	16,383	16,607	17,224	17,775	18,121
Total GTA		3,388,093	3,716,240	3,764,613	3,843,127	3,952,407	4,023,745	4,235,756

Source: Ministry of Treasury and Economics, 1989; and municipal assessment data, Statistics Canada, 1991 Census.

Through Scenario 1 of the Hemson/Coopers report, the OGTA updated anticipated population and employment distributions. The major characteristic of Scenario 1 is Metro Toronto accommodating an even larger component of growth through intensification. This would create a more densely developed Metro Toronto and would reduce the requirements for development lands in each of the four Regions (Hemson/Coopers, 1993, p.71). Scenario 1 also suggests a continuation of the concentration of employment within Metro (to make the most efficient use of existing infrastructure, particularly the TTC and GO systems) (Hemson/Coopers, 1993, p.72).

TABLE 3.2
GREATER TORONTO AREA:
SHARE OF POPULATION GROWTH BY REGION (BASE PROJECTION) (PERCENT)

	1981-1986	1986-1991	1991-2015
Metro	18	14	17
Durham	14	17	21
York	31	30	25
Peel	32	29	24
Halton	6	10	13

Source: Clayton Research Associates, 1991; Hemson/Coopers Consultants, 1993; Hardy Stevenson and Associates Limited, 1994.

However, over the later phases of the GTA 3Rs planning period, Durham Region is also expected to experience greater population growth. In absolute numbers, the Regional Municipalities are expected to absorb significantly greater growth than Metro Toronto to the year 2015 and beyond. By 2011, Durham, York and Peel Regions are anticipated to capture a significant percent of the growth in the Greater Toronto Area.

The population projections selected for the GTA 3Rs Analysis are presented in Table 3.3, Greater Toronto Area: Population Projections by Region.

3.1.3.2 Lifestyle and Culture

Lifestyle and cultural data (e.g., age, income and other social characteristics) are important to the analysis of alternative 3Rs systems because lifestyle and cultural context affect how 3Rs programs are accepted and they influence factors contributing to their implementation.

For the GTA 3Rs Analysis, the efficacy of waste diversion scenarios may also be influenced by the changing lifestyle and cultural composition of the population. Changes in how people use their time, their attitudes and values influence their involvement in 3Rs initiatives. "Cultural data" is thus considered because educational programs and other GTA 3Rs components must be sensitive to the potential influence of language and tradition on the extent of adoption of GTA 3Rs options. "Age" provides an indication of whether waste diversion should be oriented to a younger population, or whether the Region is characterized by an older population possibly less able to participate in some of the more physical diversion activities. "Family status" indicates the lifestyle of people who may be able to participate in waste diversion activities. "Income levels" assist in the understanding of the ability of residents to afford GTA 3Rs diversion activities that may involve higher costs.

Culture

Cultural data is important to the analysis of alternative 3Rs systems because the cultural context reflects whether people will understand and change their behaviour to achieve 3Rs initiatives. Table 3.4 indicates that the current language make-up within the GTA varies considerably. The diversity of cultural groups will continue to grow over the planning period.

The nature and extent of cultural change over the planning period is strongly influenced by Federal immigration policy. Between 1986 and 1991, 75 percent of the 154,000 immigrants to the Metro Toronto area were from Asia, the Caribbean, Latin America and Africa. Significant numbers have also immigrated from Poland and Portugal (Canadian Urban Institute, 1991b). At least 40 percent of the immigrants do not have a functional command of English and the rate is high among people whose mother tongue is Chinese, Vietnamese, Punjabi, Spanish or Portuguese. Future immigration priorities may shift toward ecological refugee areas such as parts of sub-Saharan Africa.

Table 3.4 demonstrates a rise in language diversity, from 1981 to 1991 within the GTA. Overall, as the third largest language group, the Chinese population appears to be the fastest growing of the language groups in the GTA. Polish speaking people also increased as a proportion of GTA population. The English, Italian and German speaking cultural groups each lost proportionate representation.

TABLE 3.3
GREATER TORONTO AREA: POPULATION PROJECTIONS BY REGION

	METRO	DURHAM	HALTON	PEEL	YORK	GTA
1991	2,275,771	409,070	313,136	732,798	504,981	4,235,756
1992	2,289,798	421,014	322,467	755,178	524,296	4,312,753
1993	2,303,912	433,307	332,075	778,242	544,349	4,391,885
1994	2,318,113	445,959	341,970	802,010	565,170	4,473,222
1995	2,332,401	458,980	352,160	826,504	586,786	4,556,831
1996	2,346,778	472,382	362,653	851,745	609,230	4,642,788
1997	2,361,243	486,175	373,459	877,758	632,532	4,731,167
1998	2,375,797	500,370	384,587	904,565	656,725	4,822,044
1999	2,390,441	514,980	396,046	932,191	681,844	4,915,502
2000	2,405,175	530,017	407,847	960,661	707,923	5,011,623
2001	2,420,000	545,493	420,000	990,000	735,000	5,110,493
2002	2,431,741	561,420	429,885	1,004,943	752,824	5,180,813
2003	2,443,538	577,813	440,002	1,020,112	771,080	5,252,545
2004	2,455,393	594,684	450,357	1,035,510	789,778	5,325,722
2005	2,467,305	612,048	460,957	1,051,140	808,931	5,400,381
2006	2,479,274	629,919	471,805	1,067,005	828,547	5,476,550
2007	2,491,302	648,312	482,909	1,083,111	848,639	5,554,273
2008	2,503,389	667,241	494,274	1,099,459	869,219	5,633,582
2009	2,515,534	686,724	505,907	1,116,055	890,297	5,714,517
2010	2,527,737	706,775	517,814	1,132,900	911,887	5,797,113
2011	2,540,000	727,412	530,000	1,150,000	934,000	5,881,412
2012	2,555,564	748,651	540,929	1,160,554	949,405	5,955,103
2013	2,571,223	770,511	552,082	1,171,204	965,064	6,030,084
2014	2,586,978	793,009	563,466	1,181,952	980,981	6,106,386
2015	2,602,830	816,163	575,084	1,192,798	997,161	6,184,036

Source: Hemson Consultants/The Coopers and Lybrand Consulting Group, "The Outlook For Population and Employment in the GTA", August, 1993; Regional Municipalities; Hardy Stevenson and Associates Ltd.

As a result of the growing cultural diversity, GTA 3Rs education options, particularly those geared to education in the home, will have to meet a range of linguistic requirements. Where 3Rs components are to be implemented on a neighbourhood level, waste diversion programs must be cognizant of distinct neighbourhoods and the need to tailor these programs to meet local language and cultural conditions.

TABLE 3.4
GREATER TORONTO AREA: SHIFTS IN LANGUAGE DIVERSITY

Mother Tongue		English	French	Italian	German	Chinese	Portuge	Polish	Other
Durham	1981	88.1	1.7	n/a	n/a	n/a	n/a	n/a	10.2
	1986	90.2	1.6	1.2	1.5	0.3	0.3	0.7	4.3
	1991	89.1	1.8	1.2	0.6	1.2	0.4	0.9	4.9
Halton	1981	85.8	1.9	n/a	n/a	n/a	n/a	n/a	12.3
	1986	87.6	1.7	1.4	1.8	0.4	1.1	0.6	5.3
	1991	86.2	1.7	1.5	1.6	0.7	1.2	0.8	6.2
Peel	1981	77.8	1.7	n/a	n/a	n/a	n/a	n/a	20.5
	1986	78.7	1.6	4.4	1.6	1.1	2.6	1.1	9.0
	1991	72.8	1.5	3.8	1.2	2.1	3.2	2.1	13.3
Metro	1981	67.7	1.5	n/a	n/a	n/a	n/a	n/a	30.8
	1986	69.1	1.3	6.7	1.6	3.9	2.8	1.4	13.1
	1991	64.2	1.3	5.3	1.3	6.1	3.0	1.8	17.1
York	1981	82.7	1.1	n/a	n/a	n/a	n/a	n/a	16.2
	1986	80.7	1.0	7.5	1.7	1.8	0.3	0.4	7.1
	1991	73.3	1.1	8.5	1.3	5.1	0.5	0.4	10.0
Total GTA	1981	73.3	1.5	n/a	n/a	n/a	n/a	n/a	25.2
	1986	74.9	1.4	5.5	1.6	2.7	2.2	1.1	10.5
	1991	70.9	1.4	4.7	1.2	4.4	2.3	1.5	13.5

Source : Adapted from 1981, 1986, & 1991 Census of Canada. n/a = not available

Shift in Age Profile

Age characteristics of the GTA are indicated on Table 3.5. Overall, the GTA is seeing a proportional decline in the numbers of younger people as the baby-boom generation is no longer having children. There is also an increasing number of people over the age of 65.

Toward the year 2015, the number of people in the GTA younger than 19 is expected to continue to decline in proportion to other age groups. And, as seen on Table 3.6, the median age of the population will be increasing (IBI, 1990c) with an increasingly "aging" population in the GTA and a steady increase in the percentage of elderly. Today the elderly (over 65 years) constitute over 10 percent of the population, and over the next decade the proportion of elderly is expected to increase to 14 percent (Canadian Urban Institute, 1991b). As the population ages, more homes will be composed of single elderly individuals or 'empty-nester' parents whose children live on their own. This may influence household size and the extent of adoption of GTA 3Rs components that require strenuous activities, such as tending the compost pile and moving large bins or carts.

To serve an aging population, it is predicted that municipal service provision will be targeted to: community health, culture and leisure, recreation involving less demanding sport, and senior citizen support services designed to allow people to remain in their homes (IBI, 1990c, p. 12). As the trend will be toward the integration of services, the integration of waste diversion programs may be influenced similarly.

Shift in Family Profile

Across the GTA, children and teenagers are expected to increasingly be raised in single-parent family households and family households containing children of different parents (blended families) (Canadian Urban Institute, 1991b). A growing proportion of families will be two income families, thus potentially reducing the time available for waste diversion activities.

TABLE 3.5
GREATER TORONTO AREA - AGE PROFILE
1981, 1986, 1991

		0-19 Years		20-34 Years		35-54 Years		55-64 Years		65 + Years	
		Number	%	Number	%	Number	%	Number	%	Number	%
Metro	1981	578,015	27.0	596,025	27.9	521,975	24.4	215,270	10.0	226,130	10.6
	1986	520,420	24.0	632,075	28.8	554,430	35.1	236,635	10.8	252,160	11.5
	1991	509,175	22.4	649,399	28.5	598,900	26.3	227,210	10.0	291,095	12.8
Durham	1981	97,635	34.4	75,495	26.6	67,920	24.0	21,405	7.6	21,205	7.5
	1986	102,420	31.4	87,800	27.0	84,285	25.8	26,035	8.0	25,615	7.9
	1991	126,135	30.8	106,550	26.0	113,115	27.7	29,905	7.3	33,350	8.2
Halton	1981	85,605	33.7	62,085	24.4	67,815	26.7	20,735	8.1	17,635	6.9
	1986	81,240	30.0	65,065	24.0	76,690	28.3	25,745	9.5	22,650	8.4
	1991	87,575	28.0	74,380	23.7	92,735	29.6	28,290	9.0	30,164	9.6
Peel	1981	174,490	35.6	139,135	28.6	124,845	25.4	29,550	6.0	22,695	4.6
	1986	189,815	32.0	164,715	27.8	164,235	27.8	40,825	6.9	32,570	5.5
	1991	220,020	30.0	201,451	27.5	212,405	28.9	51,910	7.0	46,570	6.4
York	1981	42,455	32.8	33,490	25.9	28,585	22.1	11,195	8.6	13,715	10.6
	1986	113,935	32.5	87,390	24.9	99,025	28.2	25,940	7.4	24,315	6.9
	1991	158,805	31.5	120,410	23.8	153,355	30.4	36,835	7.3	35,560	7.0
GTA	1981	978,200	29.7	906,230	27.5	811,140	24.6	298,155	9.0	301,380	9.1
	1986	1,007,830	27.0	1,037,045	27.7	978,665	26.2	355,180	9.5	357,310	9.6
	1991	1,101,710	26.0	1,152,190	27.2	1,170,510	27.6	374,150	8.8	436,736	10.3

Source : Statistics Canada: Census Divisions, Census Families in Private Households, 1981; Statistics Canada, Part 1, Profiles, 1986; Statistics Canada, 1991.

TABLE 3.6
GREATER TORONTO AREA - MEDIAN AGE
ACTUAL AND PROJECTED

	1987		2011	
	Male	Female	Male	Female
Metro	31.5	33.9	41.9	45.6
Durham	29.3	30.2	35.3	37.0
Halton	30.9	32.6	37.4	39.7
Peel	28.6	29.4	36.3	38.2
York	29.7	30.4	34.7	36.3
Ontario Total	31.4	33.1	39.7	42.7

Source : Demographic Bulletin, Population Projections for Regional Municipalities, Counties, and Districts of Ontario to 2011.

Any financial and time requirements that might be associated with waste diversion activities must be assessed in light of the time involved per family and other household costs. A shift toward convenience of the waste diversion activities and adaptability to demographic and neighbourhood conditions would likely assist diversion.

Shift in Income Profile

Average Incomes By Household for the Regions are indicated on Table 3.7. Understanding the differences in household income on a regional basis is useful in the design and planning of the 3Rs system. For example, in regions where the average household income is lower and where there is less discretionary income, there may be less willingness to pay for a subsidized composter, which would be viewed as a non-essential good. In less wealthy regions, it may be necessary to subsidize programs to a greater extent. At the same time, people may be more sensitive and/or resistant to waste diversion programs that require tax increases or user fees.

Across the GTA, the further automation of jobs, loss of traditional manufacturing jobs and slow growth in the construction sector may have a negative effect on people deriving their income from blue-collar employment. Many of the new jobs to be created will either be higher income, high skilled service sector jobs or low-paying part-time employment.

Further along the spectrum, the Canadian Urban Institute predicts the feminization of poverty, particularly among single parent households. Poverty will be further intertwined with race and ethnicity. Social services in the GTA are moving in the direction of being cost efficient (IBI, 1990c) to address this trend. To be effective, waste diversion activities must also ensure that efficiencies are achieved and programs are sensitive to the needs of the changing income strata and social characteristics in Metro Toronto and the GTA.

TABLE 3.7
GREATER TORONTO AREA
AVERAGE INCOME BY HOUSEHOLD

	1981	1986
Metro	\$27,476	\$40,493
Durham	\$27,235	\$38,526
Halton	\$32,208	\$48,354
Peel	\$31,501	\$46,630
York	\$33,288	\$52,206
GTA	\$28,699	\$42,674

Source : Statistics Canada, 1981 Income; Statistics Canada, Profiles, Ontario Part 2, 1986.

3.1.4 Housing

Information about housing supports the GTA 3Rs Analysis by considering whether waste diversion opportunities should focus on 3Rs components appropriate to each type of housing. In addition, information about households helps to determine whether people are homeowners and have backyards for composting activities, or whether they are tenants without backyards. Type of housing is also a factor in such waste diversion activities as curbside pick-up and composting, and in options such as the direct or indirect levy of collection fees. Across the GTA, several housing characteristics and trends have significant implications for the GTA 3Rs Analysis.

Current Household Characteristics

The GTA had a total of 1.487 million households in 1991. As indicated on Table 3.8, household size across the GTA varies from 3.5 persons per household in Markham to a low of 2.3 persons per household in East York and Toronto. Average household sizes are expected to decrease to the year 2015, as seen on Table 3.9. Most of the housing within the GTA is owned by the occupants. However, as indicated in Table 3.10, rates of home ownership vary considerably from a high of 82 percent in York Region to a low of 48 percent in Metro Toronto.

The type of households also varies across the GTA and within each Region. For example, Table 3.11 indicates that Metro Toronto is dominated by high rise apartments closely followed by single family homes. Metro Toronto also has the highest percent of low rise apartment housing stock in the GTA. In contrast, Durham Region has the most single family housing and the least amount of high rise apartments.

GTA Housing Projections

Over the planning period for the GTA 3Rs Analysis, there is expected to be considerable variation in the rate and type of new housing constructed in the GTA. For example, Table 3.12 indicates that the rate of growth of new housing in Metro Toronto is expected to continue to increase but at a slower rate than in the past. Table 3.13 indicates that much of the newer housing is expected to be multiple family, infill development. This type of housing construction is due primarily to the low amount of 'green field' development land available in Metro Toronto and the influence of Provincial housing initiatives. In addition, the OGTA Scenario 1 targets will require an increase in multiple family units in Metro Toronto as opposed to single and semi-detached housing units. To achieve this target Metro will see various forms of housing intensification including: internal housing intensification such as accessory apartments; residential lot intensification; and neighbourhood consolidation such as conversion of non-residential uses, main street developments and more intensive development of under-utilized employment lands (Hemson/Coopers, 1993. p.74).

TABLE 3.8
GREATER TORONTO AREA:
HOUSEHOLDS AND HOUSEHOLD SIZE BY REGION AND LOCAL MUNICIPALITY

Year	Local Municipality	1986 Households	Household Size	1991 Households	Household Size
Metro Toronto		827,492	2.58	864,555	2.63
	East York	433,589	2.23	44,475	2.3
	Etobicoke	119,900	2.66	115,230	2.7
	North York	198,298	2.78	203,145	2.7
	Scarborough	162,251	2.84	174,915	3.0
	Toronto	257,428	2.30	270,660	2.3
	York	54,026	2.46	56,130	2.5
Durham		106,930	3.05	136,140	3.0
	Ajax	11,790	3.10	18,085	3.1
	Brock	3,450	2.90	3,920	2.8
	Newcastle	10,940	3.12	16,380	3.0
	Oshawa	42,670	2.89	46,945	2.7
	Pickering	14,575	3.36	20,515	3.3
	Scugog	5,005	3.04	5,965	3.0
	Uxbridge	3,875	3.07	4,730	2.9
	Whitby	14,625	3.13	19,580	3.1
Halton		89,830	3.02	106,420	2.90
	Oakville	28,725	3.03	37,910	2.99
	Burlington	40,120	2.91	46,240	2.77
	Milton	9,735	3.29	10,070	3.09
	Halton Hills	-	-	12,200	2.97
Peel		185,870	3.19	229,670	3.17
	Brampton	56,885	3.31	70,785	3.29
	Mississauga	120,025	3.12	148,240	3.10
	Caledon	8,960	3.31	10,745	3.23
York		105,195	3.33	150,485	3.3
	Vaughan	17,757	3.70	29,855	3.7
	Aurora	6,640	3.15	9,375	3.1
	East Gwillimbury	4,330	3.38	5,570	3.2
	Georgina	7,640	2.94	10,455	2.8
	Markham	33,355	3.44	43,655	3.5
	Newmarket	10,685	3.27	14,175	3.1
	Richmond Hill	15,070	3.10	25,550	3.1
	Whitchurch-Stouffville	4,865	3.11	6,050	3.0
	King Twp.	4,935	3.23	5,745	3.1
GTA		1,315,317	2.83	1,487,260	2.85

Source: 1986, 1991 Census Data, Regional Planning Departments

The Regional Municipalities are expected to experience growth of all housing types. By 2015, the GTA is predicted to have 2,402,552 units, representing a 62 percent increase over the current housing stock. Table 3.13 indicates that, by 2015, the GTA will have an increasing proportion of higher density housing with the majority of the growth in the percentage of higher density housing occurring in Metro and York.

Several additional current and future trends include:

- the Toronto CMA is no longer the tightest rental housing market in Canada;
- there is very little ongoing private rental construction but the assisted rental construction component of the market has increased;
- singles, semis and freehold townhouses dominate housing starts in the Toronto CMA (includes Regions);
- housing demand in the Toronto area is expected to be weak over the next few years due to lower household formation rates. In the late 1990s home ownership is expected to increase (CMHC, 1993a);
- over the longer term to 2031, the rate of household growth in the GTA is expected to decline due to lower levels of net migration and the aging of the population out of the prime household formation stage;
- due to preferences of an aging population for high-rise and multiple family dwellings, these housing forms are expected to increase in the 1990s; and,
- shortages of developable land is expected to result in minimal growth of single-detached dwellings in Metro by the year 2000. Over the long term, non-Metro regions are also expected to have declines in household growth.

TABLE 3.9
GREATER TORONTO AREA: AVERAGE HOUSEHOLD SIZE BY REGION

	METRO	PEEL	YORK	DURHAM	HALTON
1991	2.63	3.20	3.30	3.00	2.90
1992	2.62	3.19	3.29	2.99	2.89
1993	2.60	3.18	3.28	2.98	2.88
1994	2.59	3.17	3.27	2.97	2.87
1995	2.58	3.16	3.26	2.96	2.86
1996	2.56	3.15	3.25	2.95	2.85
1997	2.55	3.14	3.24	2.94	2.84
1998	2.54	3.13	3.23	2.93	2.83
1999	2.53	3.12	3.22	2.92	2.82
2000	2.51	3.11	3.21	2.91	2.81
2001	2.50	3.10	3.20	2.90	2.80
2002	2.49	3.08	3.18	2.88	2.79
2003	2.47	3.06	3.16	2.86	2.78
2004	2.45	3.04	3.14	2.84	2.77
2005	2.42	3.02	3.12	2.82	2.76
2006	2.40	3.00	3.10	2.80	2.75
2007	2.38	2.98	3.08	2.78	2.74
2008	2.36	2.96	3.06	2.76	2.73
2009	2.34	2.94	3.04	2.74	2.72
2010	2.32	2.92	3.02	2.72	2.71
2011	2.30	2.90	3.10	2.70	2.709
2012	2.30	2.89	3.08	2.69	2.69
2013	2.30	2.88	3.06	2.68	2.68
2014	2.30	2.87	3.04	2.67	2.67
2015	2.30	2.86	3.01	2.66	2.66

Source: Hemson/Coopers, (1993), p.63; Hardy Stevenson and Associates Limited.

TABLE 3.10
GREATER TORONTO AREA: OWNERSHIP/RENTAL CHARACTERISTICS, 1991

REGION	OWNERS	%	RENTAL	%	TOTAL HOUSEHOLD	%
METRO	415,450	48.05	449,105	51.95	864,555	100
DURHAM	101,780	74.76	34,360	25.24	136,140	100
HALTON	79,045	74.28	27,375	25.72	106,420	100
PEEL	156,950	68.34	72,720	31.66	229,670	100
YORK	124,070	82.45	26,405	17.55	150,485	100
GTA TOTAL	877,295	59.00	609,965	41.00	1,487,270	100

Source: Statistics Canada, Profiles, 1991.

TABLE 3.11
GREATER TORONTO AREA: PERCENTAGE HOUSEHOLD TYPES - 1991

	Single Family	%	Semi/Town Row	%	Low Rise	%	High Rise	%	Total Region	%
METRO	287,477	33.2	156,441	18.1	110,695	12.8	309,942	35.8	864,555	99.9
DURHAM	94,005	69.0	22,130	16.3	9,255	6.8	10,750	7.9	136,140	100.0
HALTON	69,863	65.6	15,736	14.8	5,155	4.8	15,666	14.7	106,420	99.9
PEEL	113,425	49.4	53,165	23.1	9,510	4.1	53,570	23.3	229,670	99.9
YORK	120,145	79.8	13,795	9.2	5,150	3.4	11,395	7.6	150,485	100.0
GTA TOTAL	684,915	45.7	261,267	17.6	139,765	9.4	401,323	27.0	1,487,270	99.7

Source: Statistics Canada - Cat. No 95-337, 1991 Census- 100% Data

TABLE 3.12
GREATER TORONTO AREA: HOUSEHOLD PROJECTIONS BY REGION

Year	METRO	DURHAM	HALTON	PEEL	YORK	GTA
1991	864,555	136,140	106,420	229,670	150,485	1,487,270
1992	875,021	140,831	111,586	236,775	161,654	1,525,867
1993	884,839	145,452	115,314	244,814	166,243	1,556,662
1994	894,766	150,225	119,168	253,126	172,814	1,590,099
1995	904,806	155,154	123,149	261,720	179,964	1,624,793
1996	914,957	160,245	127,264	270,606	187,409	1,660,481
1997	925,223	165,504	131,517	279,794	195,163	1,697,200
1998	935,604	170,934	135,911	289,294	203,237	1,734,980
1999	946,101	176,543	140,453	299,116	211,646	1,773,859
2000	956,717	182,336	145,146	309,272	220,402	1,813,873
2001	968,000	188,101	150,000	319,355	229,687	1,855,144
2002	977,584	194,958	154,069	326,296	236,797	1,889,704
2003	990,748	202,065	158,249	333,388	244,126	1,928,577
2004	1,004,089	209,431	162,543	340,635	251,682	1,968,379
2005	1,017,610	217,065	166,952	348,038	259,472	2,009,138
2006	1,031,313	224,978	171,482	355,603	267,503	2,050,879
2007	1,045,201	233,180	176,134	363,332	275,782	2,093,629
2008	1,059,275	241,680	180,913	371,229	284,318	2,137,415
2009	1,073,539	250,490	185,821	379,298	293,118	2,182,266
2010	1,087,996	259,621	190,862	387,542	302,190	2,228,211
2011	1,104,348	269,412	196,296	396,552	301,290	2,267,899
2012	1,111,115	278,280	201,108	401,596	308,419	2,300,518
2013	1,117,923	287,440	206,038	406,705	315,716	2,333,822
2014	1,124,773	296,902	211,088	411,879	323,185	2,367,827
2015	1,131,665	306,675	216,262	417,119	330,831	2,402,552

Source : Hemson Consultants/Coopers and Lybrand Consultants Outlook, 1993; Hardy Stevenson and Associates Ltd.

TABLE 3.13
GREATER TORONTO AREA: HOUSEHOLD PROJECTIONS BY TYPE

District	Housing Type	1986	1991	1996	2001	2006	2011	2015
Metro Toronto		827,492	864,555	914,957	968,000	1,031,313	1,104,348	1,131,665
	Single Det.	258,403	289,330	295,770	304,061	313,499	313,499	313,499
	Semi/Row/Town	194,774	156,440	282,851	299,252	317,385	340,882	347,704
	Low Rise	86,579	110,695	*	*	*	*	*
	High Rise	287,736	309,942	336,336	364,687	400,429	449,967	470,762
Durham		106,930	136,140	160,245	188,101	224,978	269,412	306,675
	Single Det.	71,070	94,005	110,764	130,078	154,042	182,511	205,880
	Semi/Row/Town	26,330	22,130	35,929	40,995	48,857	58,255	66,050
	Low Rise	-	9,255	*	*	*	*	*
	High Rise	9,255	10,750	13,552	17,028	22,080	28,645	34,745
Halton		89,830	106,420	127,264	150,000	171,482	196,296	216,262
	Single Det.	58,825	69,863	83,563	98,503	112,114	127,749	140,208
	Semi/Row/Town	17,275	15,735	25,265	30,113	35,307	41,443	46,578
	Low Rise	-	5,155	*	*	*	*	*
	High Rise	13,725	15,666	18,437	21,384	24,061	27,104	29,476
Peel		186,715	229,670	270,606	319,355	355,603	396,552	417,119
	Single Det.	86,910	113,425	134,890	160,659	175,838	194,872	202,992
	Semi/Row/Town	56,885	53,165	73,668	863,720	95,978	106,347	111,265
	Low Rise	-	9,510	*	*	*	*	*
	High Rise	42,920	53,570	62,048	71,976	82,787	95,333	102,862
York		105,195	150,485	187,409	229,687	267,503	301,290	330,831
	Single Det.	84,740	120,145	144,242	169,282	196,616	220,814	241,877
	Semi/Row/Town	10,615	13,800	20,959	22,348	25,438	27,998	30,178
	Low Rise	4,340	5,150	*	*	*	*	*
	High Rise	5,500	11,395	62,048	38,058	45,448	52,478	58,776
GTA		1,315,882	1,487,270	1,660,481	1,855,144	2,050,879	2,267,899	2,045,552
	Single Det.	559,948	678,915	770,229	862,583	953,109	1,050,595	1,104,456
	Semi/Row/Town	305,879	261,270	438,672	479,428	522,965	572,139	601,425
	Low Rise	90,919	139,765	*	*	*	*	*
	High Rise	359,136	401,323	451,581	513,132	574,805	645,165	696,621

* From 1996 onward, Low Rise is combined with Semi/Row/Town.

Source : Selected Characteristics for Census Divisions and Census Subdivisions, 1991 Census -100% Data; Hemson/Coopers, 1993; Hardy Stevenson and Associates Ltd., 1994.

3.1.5 Employment

In 1991, the GTA provided approximately 2,300,000 employment opportunities. About 60 percent of the jobs in the GTA were located in Metro Toronto. Peel Region provided the next largest source of jobs at 16.5 percent. Halton Region provided the fewest employment opportunities, at 6.2 percent. Based on Hemson estimates, Peel and York Region are anticipated to experience major gains in employment in the GTA to 2011. Durham and Halton Regions will experience about half of this employment growth.

All employment estimates must be viewed with some caution, given job losses during the recession and considerable restructuring that has occurred in the GTA.

Scenario 1 employment estimates assume that Metro Toronto will stop the decline on employment lands and attract an additional 200,000 jobs over and above the OGTA reference forecast. Total employment levels in Metro would increase 30 percent over 1991 levels with Metro retaining office space and about 12 percent of the anticipated growth in employment on employment lands (Hemson/Coopers, 1993, p.75).

Figure 3.2 indicates that the overall trends in the GTA are for increases in finance, insurance and real estate (FIRE) and service type employment. A comparison of Table 3.14 and 3.15 indicates that since 1981, manufacturing has experienced the most significant decrease in employment opportunities. Similarly, Table 3.19 indicates that labour force declines across the GTA have been greatest in the manufacturing sector and increases have been greatest in the service sector.

Table 3.17 shows that employment in the GTA has shifted from the manufacturing sector to the commercial services sector. However, both of these sectors are still dominant and provide almost 40 percent of the employment opportunities in the GTA. Within the GTA, Durham and Peel Regions have the highest dependence on manufacturing; Metro Toronto has the highest percentage dependence on finance, insurance and real estate.

Several trends are apparent with respect to future employment growth (Hemson Consulting Ltd., 1989; Hemson/Coopers, 1993):

- increasing female workforce participation rates will occur in the 35 - 65 age groups and will play a major role in the future growth of employment;
- while there has been a trend to low and decreasing employment in Metro, OGTA Scenario 1 presents a departure from this trend. Particularly, it suggests that Metro will be able to successfully stop the employment decline

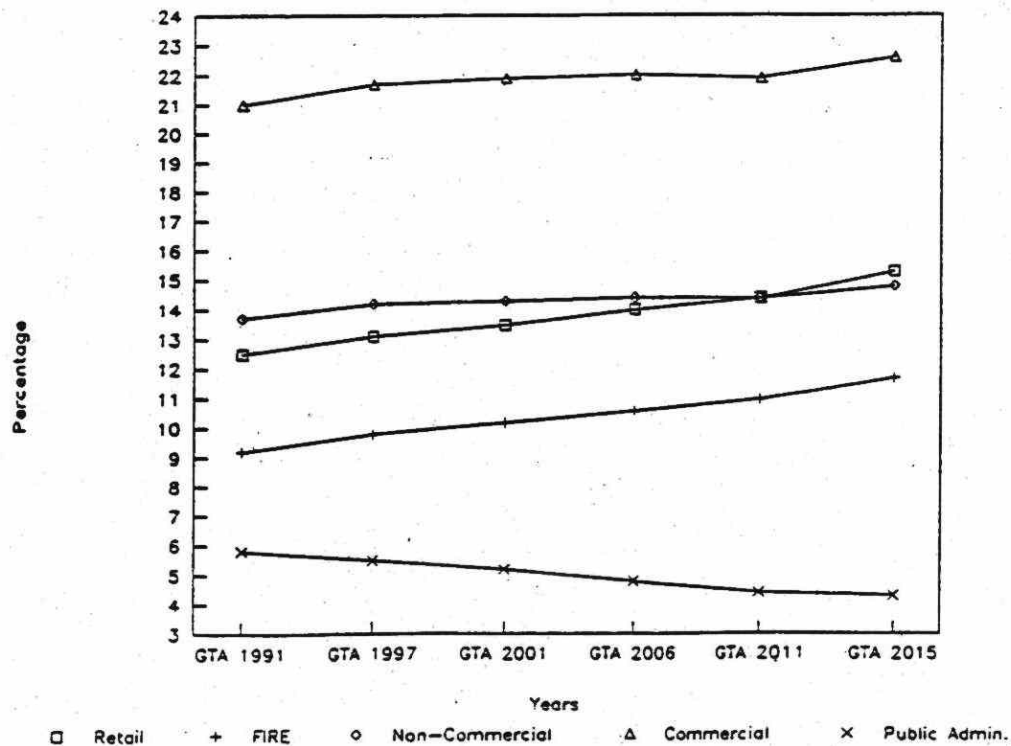
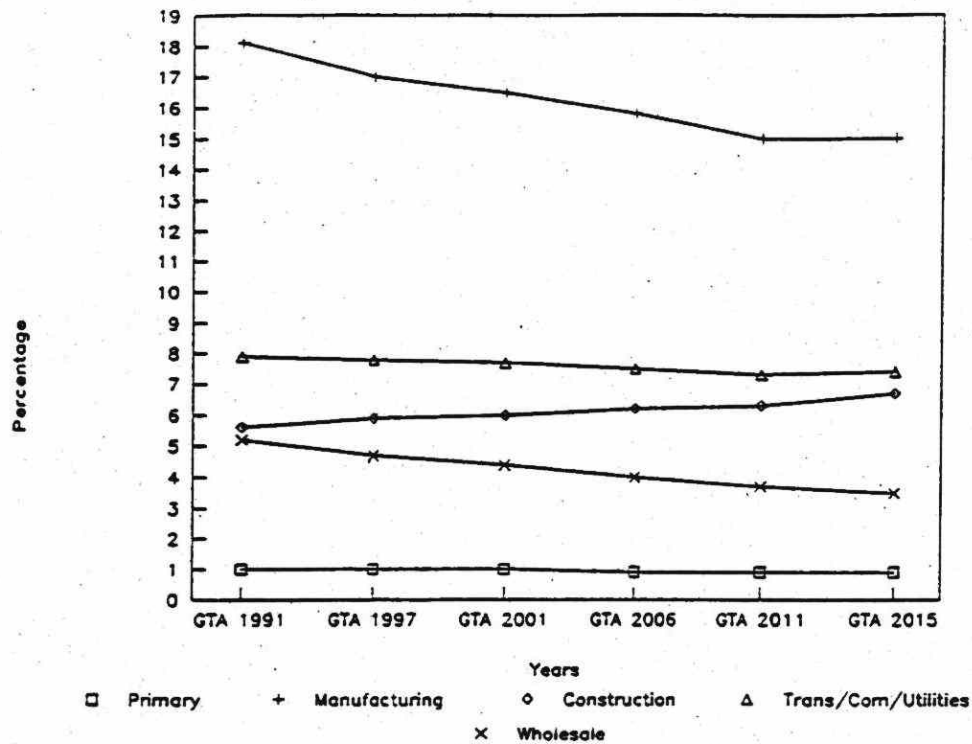
on employment lands and attract an additional 200,000 jobs (Hemson/Coopers, 1993, p.76)

- the majority of Metro Toronto growth will occur in the office sector;
- the Regions will continue to attract a growing share of future GTA employment and Peel and York Regions will accommodate half of the future growth; under Scenario 1, Metro's employment growth will shift from current absolute declines to an average, over the 30 year period, of 12 percent of the GTA growth (Hemson/Coopers, 1993, p.76);
- Halton and Durham Regions will gradually increase employment levels with more growth occurring over the longer term. A small proportion of the growth is expected from office employment.

A second analysis of future employment levels and distribution was completed by the IBI Group in their *Greater Toronto Area, Urban Structure Concepts Study* (IBI, 1990a, pp. 10-11). They assumed a number of societal trends affecting employment, including:

- continuing rapid entry of women into the out-of-home labour force, but at reduced rates relative to the last two decades;
- continuing rates of household formation until the turn of the century as the remainder of the baby boom generation enters the real estate market;
- an increasing number of retired persons living in the community, particularly following 2011 as the baby boom generation starts to reach retirement age; and,
- an increase in the overall participation rate between 1986 and 2011, followed by a decline to an intermediate level by 2021.

Figure 3.2
Employment Trends by SIC for Greater Toronto Area, 1991-2015



As part of the City of Toronto Official Plan Review, Analytic Information Management Inc. (AIMI) assessed the GTCC employment estimates (City of Toronto Economic Development Committee, 1990). This study, conducted jointly with the University of Toronto using the PRISM model, assessed potential employment changes in the GTA using the Census Metropolitan Area (encompassing Metropolitan Toronto, Peel and York Regions, all of Halton Region except Burlington and a small part of Durham Region, not including Oshawa and Whitby) as a base. Compared to the Hemson projections, AIMI notes several employment trends relevant to this study:

- labour force participation rates will level off; and,
- an aging workforce will increase the demand for consumer services (especially in the leisure market area) relative to spending on housing and "necessary" consumer durables.

As part of the context for the Metro Toronto Strategic Plan and the development of policies for the new Metro Toronto Official Plan, the Metro Toronto Planning Department completed an analysis of the magnitude and distribution of future population and employment activities within Metro Toronto and the GTA. The analysis identified several employment trends relevant to the 3Rs Analysis:

- the distribution of jobs by activity has shifted such that goods producing activities have experienced a decline while service activities have increased;
- it is assumed that Metro Toronto's long term employment will shift from industrial (manufacturing and wholesale) activities to offices; and,
- shares of employment in other sectors are expected to remain relatively stable.

In absolute terms, employment in each Region and Metro has increased since 1981 (1981 and 1991 Census employment data) and 1986 (Census labour force data). However, a comparison between 1981 and 1991 employment data indicates the service sector type of restructuring that has occurred. The GTA will continue to be influenced by the further automation of jobs and loss of traditional manufacturing jobs. A significant trend will be the continued emergence of a bi-polar service sector of: 1) highly rewarded educated management and professional service sector; 2) disproportionate numbers of workers in lower paying jobs, poor backgrounds and under-educated workforce.

As indicated in Figure 3.2, future employment trends in the GTA are toward greater increases in the commercial and non-commercial service sectors, finance, insurance, real estate and construction sectors. Continued decreases are expected to occur in the manufacturing and

wholesaling sectors.

3.2 Durham Region

3.2.1 Demographic Characteristics

In 1991, Durham had about 10 percent of the population in the GTA with 409,070 residents. As seen on Table 3.1, the most populated centre in Durham Region is Oshawa followed by Pickering and Whitby.

As most of the land in Metro Toronto is developed, Durham Region is expected to experience higher growth rates than Metro Toronto, but less than York and Peel Regions. Table 3.2 indicates that Durham is expected to receive 21 percent of the growth of the GTA between 1991 and 2015. York and Peel Regions will continue to be the fastest growing municipalities over that period.

By 2015, Durham Region is expected to have 816,000 residents, representing a doubling of its current population level. The population projections selected for Durham Region and other Regions within the GTA are presented in Table 3.3, Population Projections by Region.

Durham Region is linguistically the most homogenous region in the GTA with almost 90 percent of the population indicating English as their mother tongue.

As seen on Table 3.5, Durham has a younger population and consequently, higher fertility rate. The remainder of the age groups in the Region are about average for the Greater Toronto Area. Over the planning period, most of the growth in Durham Region will be driven by immigration (as opposed to birth rate, rate of family formations etc). Table 3.6 indicates that the median age for Durham residents will continue to be lower than for the Province of Ontario.

Durham Region has the lowest average household income of all Regions in the GTA. Given this, residential waste diversion scenarios involving additional household costs may have to consider in Durham Region residents' ability to pay.

TABLE 3.14
GREATER TORONTO AREA: EMPLOYMENT BY SIC, 1981¹

Major SIC Class	Metro		Durham		Halton		Peel		York		GTA Total	
	Empl.	%	Empl.	%	Empl.	%	Empl.	%	Empl.	%	Empl.	%
Primary	5,915	.5	4,085	3.7	3,105	3.1	2,890	1.2	4,395	4.0	20,390	1.1
Manufacturing	291,315	22.7	38,585	35.0	29,240	28.7	71,470	30.5	28,135	25.7	458,745	25.0
Construction	61,270	4.8	6,040	5.5	5,960	5.9	13,025	5.6	10,615	9.7	96,910	5.3
Trans/Comm/Utilities	101,645	7.9	8,350	7.6	4,245	4.2	27,490	11.7	7,685	7.0	149,415	8.1
Wholesale	75,545	5.9	3,485	3.2	5,680	5.6	24,560	10.5	9,435	8.6	118,705	6.5
Retail	149,115	11.6	13,310	12.1	14,965	14.7	25,065	10.7	13,845	12.6	216,300	11.8
FIRE	129,300	10.1	4,120	3.7	5,110	5.0	8,870	3.8	4,255	3.9	151,655	8.3
Non-Commercial Services	155,060	12.1	14,920	13.5	12,710	12.5	19,145	8.2	11,650	10.6	213,485	11.6
Commercial Services	238,130	18.6	13,100	11.9	16,200	16.0	33,165	14.1	16,315	14.9	316,910	17.3
Public Administration	73,900	5.7	4,195	3.8	4,515	4.4	8,775	3.7	3,350	3.1	94,735	5.2
	1,281,195	99.9	110,190	100.0	101,730	100.1	234,455	100.0	109,680	100.1	1,837,250	100.2

¹ Source: Census Canada, Total and Employed Labour Force by Selected Major Groups for Census Divisions (Place of Work), 1981.

Primary employment includes: Agricultural and Related Service Industries; Fishing and Trapping Industries; Logging and Forestry Industries; Mining (including Milling), Quarrying and Oil Well Industries. Transportation, Communications and Utilities includes: Transportation and Storage Industries; Communication and other Utility Industries. FIRE includes: Finance and Insurance Industries; Real Estate Operator and Insurance Industries. Non-Commercial Services includes: Business Service Industries; Educational Service Industries; Health and Social Service Industries. Commercial Services includes: Accommodation, Food and Beverage Service Industries; Other Service Industries.

TABLE 3.15
GREATER TORONTO AREA: EMPLOYMENT BY SIC, 1991:

Major SIC Class	Metro		Durham		Halton		Peel		York		GTA	
Primary	6,985	0.5%	4,530	2.9%	3,290	2.3%	3,855	1.0%	5,215	1.9%	23,875	1.0%
Manufacturing	204,680	15.0%	37,050	23.8%	31,540	22.3%	92,110	24.4%	49,990	20.1%	415,370	18.1%
Construction	65,215	4.8%	8,760	5.6%	9,260	6.6%	21,810	5.8%	24,005	9.6%	129,050	5.6%
Trans/Comm/Utilities	102,230	7.5%	14,880	9.6%	6,360	4.5%	43,960	11.6%	13,245	5.3%	180,675	7.9%
Wholesale	58,285	4.3%	4,960	3.2%	7,860	5.6%	29,725	7.9%	19,335	7.8%	120,165	5.2%
Retail	159,845	11.7%	21,935	14.1%	21,620	15.3%	47,415	12.5%	34,790	13.9%	285,605	12.5%
FIRE	159,585	11.7%	7,270	4.7%	8,615	6.1%	17,940	4.7%	16,930	6.8%	210,340	9.2%
Non-Commercial Services	207,570	15.2%	23,215	14.9%	18,880	13.4%	37,985	10.0%	26,770	10.6%	314,420	13.7%
Commercial Services	309,595	22.6%	23,825	15.3%	27,195	19.2%	67,465	17.8%	52,540	21.1%	480,620	21.0%
Public Administration	93,600	6.8%	9,055	5.8%	6,715	4.8%	15,755	4.2%	7,815	3.1%	132,940	5.8%
Total employed labour force	1,367,585	100.0%	155,510	100.0%	141,330	100.1%	378,025	100.0%	250,695	100.2%	2,293,145	100.0%

Source: Employed Labour Force, 15 years and over by place of work (Q9103c) Industry Divisions based on 1980 SIC Classification, x Regional Municipalities 1991, Census Canada, Basic Summary Tabulation Hardy Stevenson and Associates Ltd.

TABLE 3.16
GREATER TORONTO AREA: EMPLOYMENT PROJECTIONS BY REGION

Employment	METRO	DURHAM	HALTON	PEEL	YORK	GTA
1991	1,370,000	160,000	140,000	380,000	250,000	2,300,000
1992	1,379,686	166,025	145,192	390,337	259,571	2,340,811
1993	1,389,440	172,277	150,576	400,956	269,509	2,382,758
1994	1,399,264	178,765	156,160	411,863	279,827	2,425,878
1995	1,409,157	185,497	161,951	423,067	290,540	2,470,211
1996	1,419,119	192,482	167,956	434,576	301,664	2,515,797
1997	1,429,153	199,730	174,185	446,398	313,213	2,562,679
1998	1,439,257	207,252	180,644	458,542	325,205	2,610,899
1999	1,449,432	215,056	187,343	471,016	337,656	2,660,502
2000	1,459,680	223,155	194,290	483,829	350,583	2,711,536
2001	1,470,000	231,558	201,495	496,991	364,005	2,764,049
2002	1,482,510	240,278	208,967	510,510	377,941	2,820,207
2003	1,495,126	249,326	216,716	524,398	392,411	2,877,978
2004	1,507,850	258,716	224,752	538,664	407,435	2,937,416
2005	1,520,682	268,458	233,087	553,317	423,034	2,998,577
2006	1,533,623	278,568	241,730	568,369	439,230	3,061,520
2007	1,546,674	289,058	250,694	583,831	456,046	3,126,303
2008	1,559,837	299,943	259,991	599,713	473,506	3,192,990
2009	1,573,111	311,238	269,632	616,028	491,634	3,261,643
2010	1,586,498	322,959	279,631	632,786	510,457	3,332,330
2011	1,600,000	335,120	290,000	650,000	530,000	3,405,120
2012	1,609,729	347,740	295,506	657,136	538,811	3,448,922
2013	1,619,518	360,835	301,115	664,352	547,768	3,493,588
2014	1,629,366	374,424	306,831	671,646	556,874	3,539,141
2015	1,639,274	388,523	312,656	679,021	566,132	3,585,606

Source : Hemson Consultants Limited/Coopers and Lybrand Limited, 1993; Hardy Stevenson and Associates Limited, 1994

TABLE 3.17
GREATER TORONTO AREA: SUMMARY PERCENTAGE OF EMPLOYMENT BY SIC, 1981 - 1991

Major SIC Class	Metro		Durham		Halton		Peel		York		GTA	
	%	%	%	%	%	%	%	%	%	%	%	%
	1981	1991	1981	1991	1981	1991	1981	1991	1981	1991	1981	1991
Primary	.5	.5	3.7	2.9	3.1	2.3	1.2	1.0	4.0	1.9	1.1	1.0
Manufacturing	22.7	15.0	35.0	23.8	28.7	22.3	30.5	24.4	25.6	20.1	25.0	18.1
Construction	4.8	4.8	5.5	5.6	5.9	6.6	5.6	5.8	9.7	9.6	5.3	5.6
Trans/Comm/Utilities	7.9	7.5	7.6	9.6	4.2	4.5	11.7	11.6	7.0	5.3	8.1	7.9
Wholesale	5.9	4.3	3.2	3.2	5.6	5.6	10.5	7.9	8.6	7.8	6.5	5.2
Retail	11.6	11.7	12.1	14.1	14.7	15.3	10.7	12.5	12.6	13.9	11.8	12.5
FIRE	10.1	11.7	3.7	4.7	5.0	6.1	3.8	4.7	3.9	6.8	8.3	9.2
Non-Commercial Services	12.1	15.2	13.5	14.9	12.5	13.4	8.2	10.0	10.6	10.6	11.6	13.7
Commercial Services	18.6	22.6	11.9	15.3	16.0	19.2	14.1	17.8	14.9	21.1	17.3	21.0
Public Administration	5.8	6.8	3.8	5.8	4.4	4.8	3.7	4.2	3.1	3.1	5.2	5.8
Total	100.0	100.1	100.0	99.9	100.1	100.1	100.0	99.9	100.0	100.2	100.2	100.0

Source: Statistics Canada, 1981 Census; 1991 Census; Hardy Stevenson and Associates Limited

TABLE 3.18
GREATER TORONTO AREA: EMPLOYMENT TRENDS BY SIC, 1991-2015

Major IC&I Group	1991	1997	2001	2006	2011	2015
Primary	1.0	1.0	1.0	0.9	0.9	0.9
Manufacturing	18.1	17.0	16.5	15.8	15.0	15.0
Construction	5.6	5.9	6.0	6.2	6.3	6.7
Trans/Comm/Utilities	7.9	7.8	7.7	7.5	7.3	7.4
Wholesale	5.2	4.7	4.4	4.0	3.7	3.5
Retail	12.5	13.1	13.5	14.0	14.4	15.3
FIRE	9.2	9.8	10.2	10.6	11.0	11.7
Non-Commercial Services	13.7	14.2	14.3	14.4	14.4	14.8
Commercial Services	21.0	21.7	21.9	22.0	21.9	22.6
Public Administration	5.8	5.5	5.2	4.8	4.4	4.3
Total	100.0	100.6	100.6	100.1	99.3	102.1

Source : Statistics Canada, 1981 Census; 1991 Census; Hardy Stevenson and Associates Limited

TABLE 3.19
PERCENTAGE LABOUR FORCE BY PLACE OF RESIDENCE:
GREATER TORONTO AREA 1981,1986,1991

	Metro			Halton			Durham			Peel			York			GTA		
Major IC&I Group	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
	1981	1986	1991	1981	1986	1991	1981	1986	1991	1981	1986	1991	1981	1986	1991	1981	1986	1991
Primary	.5	.6	.5	2.4	2.2	1.9	3.2	2.6	2.3	1.2	1.0	1.0	3.3	2.1	1.6	1.1	1.1	1.0
Manufacturing	23.0	21.5	16.3	27.6	25.8	19.5	31.3	27.9	21.1	29.3	26.1	22.1	20.6	19.5	15.4	24.7	22.9	17.9
Construction	5.3	5.3	5.8	4.7	4.6	5.8	5.4	5.6	6.4	5.0	5.1	6.3	7.9	7.9	8.5	5.4	5.5	6.3
Trans/Comm/Utilities	7.8	6.9	6.7	6.5	6.5	6.8	8.0	9.0	9.1	9.4	9.5	9.7	7.2	6.5	6.4	7.9	7.4	7.4
Retail/Wholesale	17.6	17.3	16.5	19.1	18.7	19.2	16.3	16.6	17.1	20.4	21.1	19.5	19.4	20.3	20.0	18.2	18.2	17.7
FIRE	9.1	9.2	9.9	6.7	7.5	8.3	6.0	6.1	7.5	6.6	6.7	7.3	7.1	8.0	9.1	8.2	8.4	9.0
Commercial/Non-Commercial Services	31.3	34.2	38.5	28.0	29.6	32.9	24.7	26.6	30.0	23.5	26.0	29.1	28.8	30.1	34.2	29.3	31.6	35.1
Public Administration	5.3	4.9	5.7	5.0	4.8	5.6	5.1	5.3	6.5	4.5	4.4	5.1	5.6	4.8	5.0	5.2	4.9	5.6
Total	99.9	99.9	99.9	100.0	99.7	100.0	100.0	100.0	100.0	99.9	99.9	100.1	99.9	99.2	100.0	100.0	100.0	100.0

Source: Statistic Canada, 1981 Census; 1986 Census; 1991 Census.

3.2.2 Housing

In 1991, Durham had 136,140 households, as indicated on Table 3.8. Consistent with population data, the majority of households are located in Oshawa followed by Pickering, Whitby and Ajax. Table 3.10 indicates that about 25 percent of the housing units in Durham are rental units. This number of rental units is significantly less than Metro Toronto but more than York Region (17 percent), the Regional Municipality with the least rental housing units. CMHC reports that Durham municipalities are experiencing the highest rental vacancy rates in the GTA and the highest vacancies since they began surveying.

By 2015, as indicated on Table 3.11, Durham is expected to have 306,675 households, more than a doubling from 1991. As a municipality within the GTA, average household sizes indicated on Table 3.9 are expected to decline to 2.66 persons per household in 2015.

Single family housing dominates Durham Region's housing mix at 69 percent of the housing in the Region. Table 3.11 shows that as a proportion of all housing units, 7.9 percent are high rises and 6.8 percent low rises. Due to preferences of an aging population for high-rise and multiple family dwellings, these housing forms are expected to increase in the 1990s. Based on household projections, Durham Region is expected to have a considerable increase in single family housing units over the planning period. Table 3.13 indicates that the number of high-rises is expected to triple over the planning period.

3.2.3 Employment

Tables 3.14 and 3.15 indicate that, on a percentage basis, Durham Region has had considerably greater employment growth than Metro Toronto, although jobs have not been created at the same rate as in York and Peel Regions. In 1991, Durham Region had a labour force of approximately 160,000 people. As with the other Regions, Durham is expected to experience increasing participation of females in the 35 to 65 age bracket.

As indicated on Table 3.16, Durham Region is expected to have 388,523 jobs by 2015. And overall, Durham will continue to attract employment growth in GTA but not as rapidly as Peel and York Regions. The majority of Durham Region's labour force is employed in the manufacturing, retail and service sectors. In contrast, Metro Toronto's labour force has a lower percentage of people in manufacturing and proportionally more people in the commercial service sector and finance, insurance and real estate.

Since 1981, Durham's employment base has shifted with a dominant change being a decline in the manufacturing sector and increases being experienced in the transportation, communication, and utility, the retail, commercial services and public administration sectors

as seen on Table 3.17. These trends are expected to continue, reflecting broad employment shifts across the GTA.

Compared to local employment characteristics, the Durham labour force is characterized by more people involved in transportation, communications and utilities and the manufacturing sector, as seen on Table 3.19.

3.3 Metro Toronto

3.3.1 Demographic Characteristics

With a 1992 population of 2.29 million people, Metro Toronto is the largest population concentration within the GTA. Metro's population levels indicated on Table 3.1 represent 53.1 percent of the population of the GTA. In terms of growth trends, there has been slower growth in Metro Toronto compared to the GTA Regions. The OGTA Scenario 1 calls for policies that will make more effective use of the existing infrastructure in Metro Toronto by accommodating a larger portion of future growth. The scenario would create a more densely developed Metro Toronto with reduced requirements for development lands in each of the four Regions (Hemson/Coopers, 1993, p.71).

Table 3.3 indicates that Metro Toronto is targeted for 2015 growth level of 2.6 million people with most of the growth being driven by immigration. As reflected by 1991 Census data on mother tongue, for example, Metro Toronto has the most diverse language make-up followed by Peel and York Regions. Table 3.4 indicates that the dominant language in Metro Toronto is English at 64.2 percent of the population. With 17.1 percent of the residents speaking other languages, Metro Toronto has the most diverse language make-up of all Regions in the GTA, higher than the GTA average of 13.5 percent. The fastest growing Metro Toronto language group is Chinese, with both English and Italian experiencing declines.

Other language and cultural trends in Metro Toronto include: immigration characterized by people who may not have a functional command of English and people from Asia, the Caribbean, Latin America, Poland and Portugal.

Metro Toronto's population is aging, reflecting general aging trend across the GTA. As shown on Table 3.6, Metro Toronto had a 1987 median age of 31.5 for males (1986 Ontario average was 31.4) and 33.9 for females (1986 Ontario average was 33.1). Thus, Metro Toronto reflected the median age for Ontario. The median age of Metro Toronto, however, is expected to rise to 41.9 for males (2011 Ontario average will be 39.7) and 45.6 for females (2011 Ontario average will be 42.7) percent to the year 2011. Thus, Metro Toronto is expected to have an increasingly older population than the Ontario average.

Table 3.5 indicates that Metro Toronto has the fewest people under the age of 19 (22.4 percent) and the highest number of people over 65 years of age at 12.8 percent. Overall, there will be a rise in the percentage of retired persons as baby boomers retire over the planning period. Family characteristics in Metro Toronto are similar to those of the GTA and include a reduction in the number of children per family; increased divorce rate; and, people marrying at a later age.

As Table 3.7 indicates, from 1981 to 1986 Metro Toronto continued to have the second lowest household income with an average household income of \$40,493. Residents of Halton, Peel and York Regions all have higher incomes (average) than Metro residents. Other income trends include:

- continued slide of disposable income;
- double income families as norm; and
- continued income stress.

To address changing demographic characteristics in Metro Toronto, local municipalities have begun to shift municipal service provision to community health, leisure, recreation and senior support services. This trend toward integration of municipal service may also be effective in the implementation of GTA 3Rs waste diversion activities.

3.3.2 Housing

Table 3.12 indicates that in 1992 Metro Toronto had 875,021 households representing 57 percent of the GTA households. It is expected that there will be continuing rates of household formation due to baby boomers entering the housing market. By 2015, Metro is expected to reach 1,131,665 housing units, as seen on Table 3.12. Many of the units will be over 65 to 70 years old and will be undergoing renovation. Other units will be higher density units resulting from infill development. To achieve the desired population levels in Metro, Scenario 1 would see the decline in demand for single and semi-detached units and increased demand for multi-family housing (duplexes, triplexes, stacked town houses, apartments over stores, as well as units in low and high rise apartment buildings). The absence of raw land in Metro means internal housing intensification such as accessory apartments; residential lot intensification; main street developments and housing in under-utilized employment lands. The scale of the intensification efforts would require a redevelopment of land area equivalent to the combined physical area of the City of York and Borough of East York (Hemson/Coopers, 1993, p.74).

In 1991, Metro Toronto had 449,105 rental housing units, representing 74 percent of all of the rental housing units in the Greater Toronto Area. As seen on Table 3.10, Metro Toronto

also had more rental housing units than freehold units, representing the highest percent of units in the GTA.

Table 3.11 indicates that Metro Toronto's housing make-up is heavily represented by high rises (35 percent) and multiple family units (48.6 percent). Metro Toronto has the highest number, but lowest percentage of single family dwellings at 33.2 percent. There is no major difference in household size within Metro Toronto, about 2.6 persons per households (see Table 3.9). However, Metro Toronto has more single family and 2 person households than the Regions, likely reflecting the median age of residents.

3.3.3 Employment

In 1991, Metro Toronto provided 1.37 million job opportunities, representing 60 percent of the job opportunities in the GTA and a growth of 14 percent since 1981. Tables 3.15 and 3.16 indicate that Metro Toronto employs the most workers in the GTA and is expected to do so to the year 2015, when it is expected to be able to provide 1,639,000 employment opportunities. In comparing employment to labour force, Metro offers more jobs than there are Metro workers to fill those jobs.

In terms of type of employment in 1991, Metro Toronto was the highest employer in the commercial services sector at 22.6 percent of employment. The next dominant source of employment is the non-commercial service sector. With commercial and non-commercial services combined, the service industry is the major employer in Metro at 38 percent, followed by manufacturing. However, compared to the rest of the GTA, Metro Toronto's employment percentage was less in manufacturing and greater in the finance, insurance and real estate and non-commercial service sector.

Only three areas have experienced employment growth since 1981: commercial services, non-commercial services, and finance, insurance and real estate (FIRE). The manufacturing and wholesale areas have experienced significant declines.

In 1991, Metro Toronto's labour force was 1.26 million, representing little change over 1986. It is estimated that 224,000 potential jobs were lost in the recession. In contrast to the employment opportunities, Table 3.19 indicates that the service sector continues to employ most of the Metro Toronto labour force (38.5 percent), representing an increase from 1981 to 1991.

In the future, it's expected that there will be pressure to shift Metro's jobs to 2 categories: low pay, low skill, part-time; and high pay, high skill, full time. Most Metro growth will occur in the Office Sector. The highest labour force growth will be female, 35-65 age

bracket. In addition, the overall female participation rate will increase but gradually level off.

Trends include Metro Toronto increasingly losing its attractiveness as a place to look for work compared to the Regions. However, Scenario 1 of the OGTA is intended to provide a reversal of this trend and promote significantly increased Metro employment opportunities.

3.4 York Region

3.4.1 Demographic Characteristics

Table 3.1 indicates that York Region is the third largest Regional Municipality in the GTA behind Metro Toronto and Peel Region. At 504,981 residents in 1991, York Region has 11.9 percent of the population of the GTA. Markham and Vaughan are the largest municipalities in the Region. In 1988, 80 percent of York Region's residents lived in urban centres, 11.5 percent lived in rural centres and 8.5 percent lived in rural areas.

In the 1981 to 1986 period, York Region was the second fastest growing municipality, behind Peel. Within the GTA, York Region and most other Regional Municipalities are expected to absorb significantly greater growth than Metro Toronto over the GTA 3Rs planning period. Both Peel and York Regions are expected to grow fastest. By the end of the GTA 3Rs planning period, York is expected to have 997,161 residents.

In terms of cultural diversity, York Region is similar to Peel Region as seen on Table 3.4. For example, about 73.3 percent of York Region residents have English as their mother tongue compared to 71 percent of the GTA. However, York Region has the higher percentage of Italian speaking residents and a higher percentage of Chinese speaking residents. Both of these groups have grown proportionally to other groups over the last five years.

York Region has the highest percentage of young people in the 0-19 years age category and the highest percentage of people in the 35-54 age category. Table 3.5 indicates that, compared to Metro Toronto, at 12.8 percent, York Region has relatively fewer people over the age of 65 (7.0 percent). In 1987, York Region had a Median Age of 29.7 for males (1986 Ontario average was 31.4) and 30.4 for females (1986 Ontario average was 33.1). This is expected to rise to 34.7 (2011 Ontario average will be 42.7) and 36.3 (2011 Ontario average will be 39.7) percent to the year 2011. Overall, the Region will continue to have a younger population than the rest of the GTA over the long term (see Table 3.6).

In York Region and across the GTA, children and teenagers are expected to increasingly be raised in single-parent family households or blended family households (Canadian Urban

Institute, 1991b). As in the rest of the GTA, a growing proportion of York Region families will be two income families, thus potentially reducing the time available for waste diversion activities.

As indicated on Table 3.7, York Region has the highest average income of all Regions in the GTA for both 1981 and 1986.

3.4.2 Housing

As of 1991, York Region had 150,485 households with the largest number of households being located in Markham (Table 3.8). York Region households are expected to increase to 330,831 by 2015. At 3.3 persons per household, York Region also has the highest number of people per household, the highest rate of home ownership (82.5 percent) and the lowest rate of rental housing at 17.6 percent of all Regions in the GTA. Table 3.11 indicates that, in 1991, 80 percent of York Region's housing was single family dwellings; 9.2 percent was semis, row-housing and townhouses; 3.4 percent was low rise and 7.6 percent was high rise. By way of comparison, 45.7 percent of the GTA housing was single family dwellings and 27.0 percent of the housing was high rise.

Due to preferences for an aging population to desire high-rise and multiple family dwellings, these housing types are expected to increase in the 1990s. It is anticipated that the amount of higher density housing in York Region will increase to just under 18 percent of the housing stock toward the end of the planning period (see Table 3.13).

3.4.3 Employment

York Region provides 247,255 of the GTA's employment opportunities, or 10.9 percent of the jobs in the GTA (see Table 3.15). Since 1981, York Region had the greatest job growth in the GTA. As shown on Table 3.16, the Region is expected to provide 566,132 jobs by the year 2015.

As represented by employment opportunities, York Region's firms are more broadly focused compared to other Regions. At 21.1 percent, commercial services is the largest employer followed by manufacturing at 20.1 percent and retail services at 13.9 percent (see Table 3.15). Since 1981, York Region has seen a decline, proportionately, in primary industries (agriculture), manufacturing and transportation (see Table 3.17). Areas of significant increase are finance, insurance and real estate and commercial services. Thus, York Region has captured growth in the office sector.

The service sector employs over 34 percent of the Region's labour force, followed by wholesale and retail at 20 percent and manufacturing at 15.4 percent (see Table 3.19).

3.5 Peel Region

3.5.1 Demographic Characteristics

In 1991, Peel was the second most populated Region, with 732,798 residents. As indicated on Table 3.1, over 63 percent of Peel's residents are located in Mississauga. Table 3.2 indicates that both Peel and York Regions are expected to grow the fastest over the GTA 3Rs planning period. Like York Region, Peel Region has experienced more than double the growth rate of Metro Toronto.

Population projections for Peel indicate that by 2015, using OGTA Scenario 1 assumptions, the Region is expected to have 1,192,798 residents. This will be consistent with the expectation that, even with intensification in Metro, the Regions will absorb most of the future growth of the GTA.

English is still the largest language group in Peel; however, as indicated on Table 3.4, the frequency of English as a mother tongue had declined by 1991 to 72.8 percent. The second major language group is Italian (3.8 percent) followed by Portuguese (3.2 percent). The two fastest growing language categories are Chinese and Polish.

Compared to other Regions in the GTA, Peel Region has a higher Portuguese population (by mother tongue). The diversity of other language groups mirrors the diversity of the GTA.

As indicated on Table 3.5, Peel Region has proportionally more children (30.0 percent) than the GTA overall (26.0 percent). Along with Durham Region, Peel has a low percentage of older people, with 7 percent being between the ages of 55 and 64 and 6.4 percent over 65 years of age, compared to 8.8 percent and 10.3 percent respectively, for the GTA.

As indicated on Table 3.7, Peel Region residents have household incomes that are average compared to the other Regions, with a 1986 average household income of \$46,630.

3.5.2 Housing

In 1991, Peel Region had 229,670 households. As indicated on Table 3.8, most of the households are located in Mississauga. Peel Region has higher numbers of people per household compared to other Regions, reflecting younger families and extended family

structures associated with some of Peel's cultural groups (see Table 3.9).

At 68.3 percent, Peel has the second lowest rate of home ownership (31.6 percent rental), although it has a higher rate than the GTA average rate of home ownership of 58.9 percent (see Table 3.10). The majority of Peel's dwellings are single detached, although Peel Region also has the highest percent of semis, town-homes and row housing. The Region also has a higher proportion of high rises, at 23.3 percent, compared to other Regions (see Table 3.11).

Peel is expected to have 417,119 households by the year 2015, making it the second largest municipality behind Metro Toronto, as indicated on Table 3.12. The robust household growth expected over the planning period will include a near doubling of the numbers of single-family detached and high-rise dwellings.

3.5.3 Employment

Peel Region employment stands at approximately 380,000 jobs as of 1991. While Peel Region is a distant second to Metro in terms of employment opportunities in the GTA, it offers twice the number of jobs compared to Durham and Halton Regions. Peel Region has experienced the second largest employment growth in the GTA behind York Region (see Table 3.17). Most of Peel's employment growth from 1981 to 1991 has been in the transportation, communication and utilities, retail, finance, insurance and real estate and commercial services sectors. Peel has experienced proportional employment losses in the manufacturing and wholesale sectors over the same time period.

The number of employees is expected to increase to 679,021 jobs by the year 2015 as indicated on Table 3.16. By the year 2015, both York and Peel Regions are expected to offer considerable employment opportunities within the GTA. Peel is expected to capture 19 percent and York Region an additional 15 percent of the employment growth in the GTA.

Labour force data (employed residents who may work in Peel or elsewhere) indicates the sectors in which Peel residents work. Peel Region had a labour force of 427,895 in 1991. Thus, Peel Region has more workers than it does jobs. Table 3.19 indicates that labour force employment in manufacturing has declined, and has increased considerably in the commercial service sector since 1981.

3.6 Halton Region

3.6.1 Demographic Characteristics

Halton is the least populated region in the GTA with a 1991 population of 313,136. Halton will have an increasing population growth in the GTA between 1991 and 2021 but will not grow as fast as the other Regions (see Table 3.2). Except for Durham Region, Halton has a relatively high percentage of people whose mother tongue is English (86.2 percent). Halton is reflective of the whole GTA in that it will experience an aging population between 1987 and 2011 (see Table 3.6). Halton Region households have a higher average income than the other regions except for York (see Table 3.7).

3.6.2 Housing

Halton Region has the fewest number of total households in the GTA and has a household size reflecting the GTA average (see Table 3.8). Halton is typical of all other Regions except for Metro Toronto in its division of home ownership and rental. As indicated on Table 3.11, Halton is comprised primarily of single family residences (65.6 percent), semi/town/row houses (14.8 percent) and high rise apartments (14.7 percent). Between 1991 and 2015 the total number of households is expected to double to 216,262 residents (Table 3.12).

3.6.3 Employment

Employment projections from 1986 to 2015 (see Table 3.16) demonstrate a more than doubling of employment opportunities (140,000 to 312,000) over the planning period. Halton has a higher percentage of employment involved in retail than the GTA average (15.3 percent). Manufacturing still plays a significant role in regional employment (22.3 percent, see Table 3.17).

Halton's labour force of 181,840 is primarily working in the service, retail/wholesale and manufacturing sectors.

3.7 3Rs Legal and Regulatory Framework within the GTA

The key laws, regulations and protocols currently in force relating to the management of 3Rs in the GTA are as follows:

- *The Environmental Protection Act (EPA)* is the primary act governing the approval

of new waste management systems and sites in Ontario.

- *Ontario Regulation 347* (formerly Regulation 309), provides different levels of regulatory scrutiny to a variety of wastes ranging from hazardous wastes to municipal solid wastes.
- *The Environmental Assessment Act (EAA)* applies to specific waste management systems, sites and facilities which are considered to require a more comprehensive assessment than that provided by the EPA process alone.
- *The Consolidated Hearings Act* permits several hearings on the same system or facility under different Ontario acts to be combined and held at the same time.
- *The Waste Management Act, 1992* (formerly Bill 143), continues the IWA as a Crown agency and gives it additional powers to establish three long-term landfills in the GTA. It also allows the province to require major packaging users and the larger IC&I establishments to carry out waste audits and prepare waste reduction workplans.

In addition to legislation and agreements in place, the Ontario government has launched a number of important 3Rs initiatives since 1991. These include:

- *3Rs Regulations (promulgated, March 3, 1994)* denote a range of activities which must be undertaken by designated municipalities and IC&I sectors, including:
 - Recycling and backyard composting programs for all municipalities with a population of 5,000 or more.
 - Leaf and yard waste composting in municipalities with a population of 5,000 or more that have existing collection programs for these wastes, and in all municipalities with a population of more than 50,000.
 - Waste audits and waste reduction workplans for large retail complexes, hospitals, schools, hotels and motels, restaurants, office buildings, large construction and demolition projects and manufacturing establishments.
 - Recycling programs for large retail complexes, hospitals, schools, hotels and motels, restaurants and office buildings in municipalities of 5,000 or more population, and large construction and demolition projects and manufacturing establishments regardless of location.
 - Packaging audits and packaging reduction workplans for Ontario

manufacturers, packagers or importers of packaged food, beverage, paper and chemical products.

- Recycling programs for multi-unit residential buildings with six or more units in municipalities of 5,000 or more population.
- *Waste Reduction Action Plan (WRAP)* expressed the Province's commitment, in February 1991, to implement strong regulatory measures to reduce, at source, the flow of valuable resources currently being landfilled.
- *Incineration ban.* In April 1991, construction of any new municipal solid waste incinerators was prohibited in Ontario. This was promulgated as a regulation amending EPA Regulation 347 (formerly 309) in September 1992. In terms of the IWA landfill search for the GTA, incineration was to be excluded as an "alternative to the undertaking". The ban does not apply to existing municipal incinerators and incineration of some specific wastes, subject to stringent controls.
- *Waste export control and local disposal.* In April 1991, the Environment Minister expressed the Province's wish to encourage municipalities to dispose of their municipal solid waste as close as possible to where it originated. At present, some municipal waste is exported, as well as a substantial and increasing amount of IC&I waste. Export of IC&I waste is encouraged by low US tipping fees, the easing of US waste import regulations, high waste charges in the GTA, and mixed-waste surcharges in Metro Toronto, with the additional impetus of the difficult economic situation. However, when current amendments to U.S. waste regulations come into force, many U.S. landfills may close, which is likely to alter the disposal options of Canadian solid waste exporters.
- *The National Packaging Protocol (NAPP)* is a national agreement, supported by Ontario, on measures to reduce packaging being disposed of in Canada by 50 percent by the year 2000, with interim goals of 20 percent by 1992 and 35 percent by 1996.

3.8 Residential/Municipal Attitudes And Behaviours

This section documents the residential and municipal 3Rs attitudes and behaviours identified in the GTA and in the Regions. It does not document existing programs in each of the Regions. It is intended to provide an indication of the prevailing attitudes and behaviours and can be used as the base on which to project future behaviour and types of social effects. The data was derived from: (a) interviews with Regional representatives (Schedule C); (b) interviews with IC&I Association representatives (Schedule D); (c) interviews with waste

management facility operators (Schedule E); (d) analysis of case studies; and, (e) review of public opinion surveys, reports and published literature.

Overview of Public Attitudes to the Environment: Public Opinion Surveys

The following data were taken from a series of Province-wide public opinion surveys.

- People should make sacrifices to protect the environment. (Decima Research, Spring 1992)
- People are almost all concerned about the quality of the environment. (Decima Research, Fall, 1991; Spring, 1992; Fall, 1992)
- Most people believe the quality of the environment in their area is good and has stayed about the same. (Decima Research, Fall, 1991; Fall 1992)
- Most people are thinking about the whole world when they think about environmental issues that affect them - depletion of the ozone layer is considered the most important issue, and only 3 percent consider waste and garbage disposal to be the world's most serious environmental problem. (Decima Research, Summer, 1992) •
- Most people are somewhat more optimistic about our ability to do something about the environment than they were a year ago (Decima Research, Fall 1992), mostly because ordinary people are trying harder (Decima Research, Fall, 1991; Fall, 1992); for those who are pessimistic, it is because governments are not trying hard enough. (Decima Research, Fall, 1991)
- Most people have made minor changes to their lives because of concerns about the environment. (Decima Research, Fall 1991; Spring, 1992; Fall, 1992)
- Among those who have made changes, the media was the most significant influence and most believe their actions have a minor impact. (Decima Research, Fall, 1991)
- People believe that individuals should have primary responsibility for protecting the environment. (Decima Research, Fall, 1992)
- There is some agreement that the environment should be protected even at the expense of jobs. (Decima Research, Summer, 1992)

3.8.1 Waste Management

Overview of Public Attitudes to Waste Management: Public Opinion Surveys and Regional Staff Interviews

The following public attitudes and Regional initiatives to waste management provide the waste management context for the 3Rs analysis.

- Thirty five percent of people surveyed believed they could reduce up to twenty percent of household garbage, "if they changed what they buy, and were careful to reuse, recycle and compost." Thirty two percent believe they could reduce the amount of waste they generate up to forty percent. Over a quarter (27 percent) believe they could achieve over forty percent reduction in waste generated. (Environics, 1990, p.15)
- About sixty percent of residents surveyed "are aware of some sort of action being taken to deal with the waste management problem." (Environics, 1992a, p.12). Though fifty seven percent of residents regard waste disposal as a "very serious problem" specific measures to manage waste ranges from a thirty six percent awareness of the search for landfill sites, thirty four percent unaware of anything being done to manage waste, and two percent awareness of composting. (Environics, 1992a)
- Fifty three percent of those surveyed attributed their source of awareness to daily newspapers and television. Current waste management programs such as Blue Boxes only account for a four percent source of awareness of a waste management problem. (Environics, 1992a)
- "Over two-thirds of GTA residents (70 percent) either strongly (34 percent) or somewhat (36 percent) agree" that municipalities should be responsible for managing the waste they respectively produce. (Environics, 1992a, p.13)
- Thirty seven percent would strongly (16 percent) or somewhat agree (21 percent) with requiring households to pay a fee for the amount of garbage they put out for pick-up. (Environics, 1990, p.16)

Durham Region

- The Region is not aware of any concerns of the lower tier municipalities regarding a pay-by-bag system. (Watson, P., 1993b)

- The Region is not considering a wet/dry waste diversion program. (Watson, P., 1993b)

Metro Toronto

- Metro Toronto has suggested that its area municipalities consider direct cost or pay-by-bag garbage collection programs, but has no jurisdiction to enforce such a program. (Pollock, A., 1993)
- The administration and implementation of a direct cost system might be complex and therefore difficult to execute. The costs of starting and sustaining such programs might outweigh their possible benefits. (Pollock, A., 1993)
- Metro Toronto completed a 3 stream (organics/recyclables/garbage) wet collection pilot project that included alternate week pick up of some streams, maintaining every week collection of food waste because of health and odour concerns. The results of the project are currently being evaluated. (Pollock, A., 1993)

York Region

- Unionville residents are clearly satisfied with waste management programs; expressed a need for further programs; but, do not want project initiatives to result in additional costs to taxpayers. (Town of Markham, 1993)

Peel Region

- The Region has implemented a landfill ban on certain materials. (Morgan-Fraser, L. & Williams, G., 1993)
- The attempts to unload or place inappropriate waste in landfill is an obstacle to increased waste diversion. (Morgan-Fraser, L. & Williams, G., 1993)
- A direct cost or pay-by-bag garbage collection program is being considered, although a survey of Peel residents and businesses identified a perception that direct cost systems are difficult to implement because waste management is a political issue and a service that people traditionally have not paid for properly. (Morgan-Fraser, L. & Williams, G., 1993)

Halton Region

- The Region has implemented a landfill ban on recyclable material. (Lesnicki, V. & Mercer, A., 1993)
- The attempts to dispose of inappropriate waste in landfill is an obstacle to increased waste diversion. (Lesnicki, V. & Mercer, A., 1993)
- A direct cost or pay-by-bag garbage collection program is being considered, and is generally considered to be feasible. There currently exists a user pay service system at most of the Region's drop-off centre depots, regardless of the weight of the waste. At one depot, a cost is applied only after 150 kg. (Lesnicki, V. & Mercer, A., 1993)
- The Region might consider a 3 stream (kitchen/yard organics, recyclables and garbage) wet/dry diversion program in two years. Pick up of food waste will remain a component of an every week system. (Lesnicki, V. & Mercer, A., 1993)
- Oakville has implemented a bag limit for garbage pick-up. Burlington is currently (May, 1993) implementing a bag limit. (Lesnicki, V. & Mercer, A., 1993)
- The Region is studying lifting mechanisms for collection trucks that would weigh bags, as well as a tag system that would limit the number of bags a household could put out according to the number of tags issued. (Lesnicki, V. & Mercer, A., 1993)
- The Region will be moving to a single tier waste management system where the Region would manage collection and disposal of residential waste. Currently, the Region is responsible for disposal and the municipalities are responsible for collection. There are difficulties in coordinating 3Rs programs with the current split jurisdiction. There is, however, a benefit to the current division of responsibilities between the Region and municipalities from the customer service point-of-view, i.e., local foremen are more accessible to answer concerns than in a larger Regional infrastructure. (Lesnicki, V. & Mercer, A., 1993)

3.8.2 Residential Recycling and Collection

Overview of the 3Rs: Public Opinion Surveys

- Forty eight percent of people surveyed were aware of the term "3Rs". Recycling was cited as the most well-known of the 3Rs, followed by reuse. (Environics, 1990)

- Eighty five percent agree that legislation should be enacted mandating that packaging should be classified as returnable, recyclable or disposable. Fifty one percent of those surveyed would support a requirement mandating governments to use recycled materials, regardless of whether they cost more. Fifty three percent would advocate compulsory participation in waste reduction. (Environics, 1990)
- Only thirteen percent considered reuse the most effective method of the 3Rs. Recycling and reduction were almost equally considered the most effective at forty one percent and thirty seven percent respectively. The analysis highlighted that most of those who were aware of reduction as a 3R activity regarded it as "the best way to deal with the garbage problem." (Environics, 1990, p.8)
- More people (52 percent) would prefer a deposit system to reuse glass bottles rather than recycle glass bottles through the Blue Box program. "Reusing containers, and participating in recycling programs top the list of steps residents report taking to deal with the amount of garbage they throw out." (Environics, 1990, p.9)
- Seventy three percent of GTA residents participate in household waste recycling through the Blue Box program. Recorded participation is highest outside of Metro Toronto (82 percent). This could be attributed to the higher concentration of apartments and condominiums in Metro Toronto, many of which were not equipped with the Blue Box recycling program. Only thirty two percent of those living in apartments participate in the Blue Box recycling program. Extrapolating apartment dwellers from the participation level results in a 93 percent participation level of respondents who live in houses. For those who live in houses, two percent do not participate because it is too time consuming, and two percent do not participate because "they believe the program is ineffective." (Environics, 1990, p.12)
- Participation in the Blue Box program is higher in Halton Region (88 percent) than York (87 percent), Peel (85 percent) and Durham (68 percent) Regions. (Environics, 1990)
- Participation in waste reduction activities is high only for recycling - people sometimes will buy environmentally friendly products, avoid excessive packaging, avoid chemical pesticides, and a large number never compost. (Decima Research, Spring, 1992)
- Recycling is considered the most important of the 3Rs for protecting the environment. (Decima Research, Fall, 1992)
- More people oppose (52 percent) than support (47 percent) a charge to households of

50 cents a bag for collection (Environics, 1992b)

- People believe that environmentally friendly packaging is primarily the responsibility of governments (through regulation) and consumers. (Decima Research, Fall, 1992)
- Most people believe that companies are doing a good job to reduce packaging and few say companies have primary responsibility for ensuring that packaging is environmentally friendly. (Decima Research, Fall, 1992)
- People believe that environmentally friendly products are priced about the same or somewhat higher than others and that the quality is about the same. (Decima Research, Spring, 1992)
- People say they are willing to pay more for environmentally friendly products and disagree that convenience is more important to them. (Decima Research, Fall, 1991)
- People have qualifications about the belief that purchasers of non-green products should have to pay a lot more for these products. (Decima Research, Spring, 1992)

Overall Obstacles to Recycling

- Apartment buildings are a gap in the success of household participation in recycling; in general, older buildings are not designed to handle the streaming of waste. (Hay Management Consultants, 1990)

Durham Region

- The Region is not considering a mixed waste processing facility. (Watson, P., 1993b)

Metro Toronto

- Metro Toronto will not implement a mixed waste processing or collection system because of capital costs, the failure rates of existing mixed waste facilities, and because a mixed waste facility runs contrary to its philosophy of personal involvement in waste diversion. (Pollock, A., 1993)
- There are no 3Rs by-laws in effect for the residential sector. (Pollock, A., 1993)

- Two obstacles encountered by Metro Toronto to increasing waste diversion in the residential sector are:
 - The cost of programs and cost sharing with area municipalities. The program cost for Blue Box recycling is currently significantly greater than that for landfilling; and,
 - An existing agreement states that after five years, collection costs are to be passed from Metro Toronto to the area municipalities. This creates a burden for area municipalities since the recycling fleet has to be replaced. (Pollock, A., 1993)
- Over the next five years Metro Toronto must contemplate the costs of continued 3Rs waste diversion programs, including incorporating the cost of recycling into the cost of the product to be passed on to the consumer. (Pollock, A., 1993)
- The division of responsibilities between the Region and area municipalities has worked well for both jurisdictions. If the area municipalities had to assume the costs of Blue Box programs, they might re-evaluate the system and move to less frequent collection. (Pollock, A., 1993)
- The centralizing of recycled materials collection and markets has given Metro Toronto more leverage in the market, since it can offer greater volumes and a steadier supply of materials. (Pollock, A., 1993)
- Metro Toronto 3R's Program met the 1992 Provincial recycling target of 25 percent. Metro Toronto has found that participation is more difficult in multiple-family dwellings, and this therefore requires greater focus and effort. (Pollock, A., 1993)

York Region

- Unionville residents feel that the reduction, handling and management of organic material is the greatest challenge to the development of a comprehensive waste management strategy. (Town of Markham, 1993)

Peel Region

- The inclusion of contaminated material in Blue Boxes is an obstacle to increasing waste diversion. (Morgan-Fraser, L. & Williams, G., 1993)

- The Region is considering some form of mixed waste processing and/or collection program. (Morgan-Fraser, L. & Williams, G., 1993)
- Homogenization of Blue Box programs and direct cost systems for the residential sector may occur. (Morgan-Fraser, L. & Williams, G., 1993)
- Neighbourhood recycling depots will be established with street-locked collection containers in the downtown cores and in multi-residential dwellings. (Morgan-Fraser, L. & Williams, G., 1993)

Halton Region

- The Region is considering some form of mixed waste processing and/or collection program. (Lesnicki, V. & Mercer, A., 1993)
- The inclusion of contaminated material in Blue Boxes is an obstacle to increasing waste diversion. The Blue Boxes are also not big enough and are overflowing. (Lesnicki, V. & Mercer, A., 1993)

3.8.3 Residential Leaf and Yard Waste Collection

Halton Region

- Over the next five years, Halton will be considering banning the collection of grass. (Lesnicki, V. & Mercer, A., 1993)

3.8.4 Residential Household Composting

Overview of Composting Behaviour

- Although over half (52 percent) of those surveyed report that they know what backyard composting involves and why it is done, only twenty-two percent report composting waste in their backyards. More of those who live outside of Metro Toronto, especially Durham and York, claim to participate in backyard composting. (Environics, 1990)
- In the GTA in 1990, forty-two percent of those surveyed did not participate in backyard composting because they lived in apartments (29 percent), or because they

did not have backyards (13 percent). Of those who make up the rest of the statistics, ten percent did not have time, ten percent had no knowledge about composting, eight percent did not know how, six percent did not have room and five percent believed composting was too messy. (Environics, 1990)

- Of those surveyed who reported not participating, those in Metro Toronto tended to live in apartments while those living in York and Peel reported that they had never heard of composting. (Environics, 1990)
- If increased information and access to containers was provided, fifty-three percent of those not currently composting would likely start to participate. (Environics, 1990)
- In comparison to backyard composting, if a municipal curbside program was implemented, sixty-one percent said they would participate. Twenty-eight percent of GTA residents thought collecting kitchen and garden waste was too awkward and messy. Twenty-six percent were simply not interested and five percent report having no time to participate. (Environics, 1990)
- To discover the effect of a municipal program on backyard composting, respondents were asked if they would continue their backyard composting activities if they had a municipal program available to them. Three-quarters (76 percent) would maintain their backyard composting activities. Nineteen percent stated that they would halt their backyard composting. Those who live outside of Metro Toronto, particularly those who live in Halton Region, would continue their backyard composting activities regardless of a municipal program. (Environics, 1990)

Durham Region

- A study (Compost Management Associates Ltd., 1992a) evaluated three different types (Barrel, Soil Saver, Ecolyzer) of backyard composting units which were distributed to 60 selected homes in the Town of Newcastle from July to early September, 1989. Among the study findings were:
 - Nearly all of the participants planned to continue using their composters. Each participant surveyed reported that they would recommend backyard composting to their neighbours.
 - The vast majority of respondents were strongly supportive of the concept when asked, "What do you think about your composter and composting in general?"

Even those who reported that the activity was an occasional nuisance, felt that they would continue because it was the responsible thing to do.

The vast majority of respondents felt that the use of composters made a significant difference in the volume of waste generated by the household.

One-third to one-half of the respondents reported that the presence of the composters tended to influence their buying habits to be more reflective of consumer values.

A significant number of respondents reported that the experience had stimulated a greater interest in reading about environmental issues.

- A second study by the same firm (Compost Management Associates Ltd., 1992b) reviewed the first year results and summarized the findings from interviews with 64 households in Pickering. Among the study findings were:

Sixty-four percent of the households reported no problems with the installed composters. The most frequent complaint was that the composter filled too quickly, i.e., too small. Other complaints included problems with raccoons, bees, squirrels and mice.

Separating organic waste from other garbage did not appear to be a problem, although households are less enthusiastic about storing it before it is fed into the composter.

Virtually all respondents see the need for some type of kitchen container to collect food waste. In fact, 34 percent of the respondents claimed they would not be composting food waste if a kitchen container had not been provided.

There was very little previous experience with backyard composting (only 14 percent).

There was a great deal of support (98 percent) for the program among the households interviewed. Respondents felt that free composters and kitchen containers, with door-to-door delivery was the key to ensuring the success of the program. Respondents also noted that the provision of good instructional materials on composting was very important.

The data on whether or not respondents would pay for composting units was somewhat contradictory. While many said they would pay \$21.00 for a unit -

once they had the opportunity to evaluate it - it was by no means clear if people would pay the money up front upon delivery.

Respondents also identified a need for: (1) a Master Composter Program; (2) a composting hotline; and, (3) a guide or newsletter for composters.

Metro Toronto

- The purpose of the Maclaren (1990) study was to provide a follow-up evaluation of Metro Toronto's home composting program. By the spring of 1990, Metro Toronto had distributed more than 19,000 subsidized home composting units (three types) to residents requesting them. Among the study findings were:
 - The reasons cited for composting were, in order of importance: reduce waste; benefits for the garden; availability of a subsidized unit; being persuaded by another person; and, some other reason.
 - Tending the composting pile was considered to be the most difficult task, with two out of five respondents reporting some difficulty here. There were few difficulties identified with any of the other activities.
 - More than one-half of the respondents reported difficulties with flies. Other difficulties identified (in order of prominence) included: winter composting; insufficient unit capacity; poorly fitting or insecure lids; odours; and, scavenging animals.
 - Importantly however, all of the problems noted above resulted in only 3 percent of the respondents discontinuing their composting activities. The study concluded that respondents are therefore pleased with the composting program.
 - Most households would make use of a municipal curbside collection program for compostable waste.
 - Most respondents (82 percent) would not have purchased their units if they had only been available at retail prices. The availability of subsidized units was particularly important to those composting for the first time. (Maclaren, 1990)
- A second report (Metropolitan Toronto Works Committee, 1992) discussed the results of a survey questionnaire which was mailed to a sample of Metro Toronto residents

(900 respondents) who had purchased composters from 1989-91. Among the report's findings were:

- Nearly all (98 percent) of the composters were being used, and 85 percent were being used year-round. Only 2 percent of those surveyed expressed dissatisfaction with the units.
- For most (60 percent) of the respondents, this was their first experience with composting.
- Three-quarters of the respondents reported that they would not have purchased a composter without a subsidy.
- Most respondents learned of the program through the media (newspapers, radio, T.V.) and friends.
- The most common concerns, in order of importance, were: limited capacity; insecure doors/lids; insects, flies or bugs; scavenging animals; and, odours.
- A majority of respondents would have composted more if a kitchen container had been provided.
- Most respondents (87 percent) indicated that they would continue with backyard composting even if curbside collection of food waste was provided.
- It can be generally concluded that the level of satisfaction with the backyard composting program is high.

York Region

- Unionville residents extremely interested in home composting in order to reduce the amount of organics going to landfill. (Town of Markham, 1993)

Peel Region

- The Region's waste management survey of residents and businesses found that the image of backyard composting has suffered because of media reports linking composting to a rodent problem. (Morgan-Fraser, L. & Williams, G., 1993)

3.8.5 Other Residential Waste Diversion (HHW, Toxic Taxi, Pilot Wet-Dry, White Goods Collection, White Goods Drop-Off, etc)

Peel Region

- A more effective Household Hazardous Waste program is an initiative. Community recycling centres and Household Hazardous Waste depots at these centres will be established throughout the Region. This system will include bins for specific wastes at local areas such as shopping malls, and will be provided to local businesses. (Morgan-Fraser, L. & Williams, G., 1993)

Halton Region

- A more effective Household Hazardous Waste program is an initiative being implemented by Halton Region. (Lesnicki, V. & Mercer, A., 1993)

3.8.6 Composting Facilities

- The most frequently registered complaint regarding leaf and yard waste composting facilities (throughout the GTA) is that of odour. This effect has been reported at three of the five leaf and yard waste composting facilities, and at one wet/dry composting facility. (Rhodes, J; Corvinelli, C; Dale, D; Cuthill, J. & Taylor, P; 1993)
- One composting facility noted a noise effect, which has since been mitigated. (Cuthill, J. & Taylor, P., 1993)
- One facility experienced an increase in seagulls circling the facility. This has not been mitigated. (Cuthill, J. & Taylor, P., 1993)

Durham Region

- The Region is not considering a neighbourhood composting facility, but is setting up a fully operational leaf and yard waste composting facility. (Watson, P., 1993b)

Metro Toronto

- Metro Toronto has some composting systems at multi-residential dwellings using a

3 bin system. Because there have been many problems (e.g., odour) with municipal composting facilities, neighbourhood composting facilities are unlikely. (Pollock, A., 1993)

- The centralized composting facility at the North Dufferin Transfer Station is not operating since the wet collection pilot project has just been completed. There were some complaints about odour emanating from this facility. (Pollock, A., 1993)

Peel Region

- Peel Region is examining the feasibility of a joint venture with the Region of Halton for a centralized composting facility. The centralized composting facility would be a food/yard waste facility, serving a 3 stream wet/dry system. (Morgan-Fraser, L. & Williams, G., 1993)
- Brampton is considering a neighbourhood composting facility. (Morgan-Fraser, L. & Williams, G., 1993)
- There were a few odour complaints concerning the Region's leaf and yard waste composting facility. The effect was mitigated with a more frequent turning of the compost material. (Morgan-Fraser, L. & Williams, G., 1993)

Halton Region

- A centralized composting facility is a component of a five year 3Rs plan. The facility is planned to be a mixed waste processing facility. The site will also include a Household Hazardous Waste depot and landfill. (Lesnicki, V. & Mercer, A., 1993)
- The Region is not considering neighbourhood composting facilities, although each municipality has a leaf and yard waste composting facility. (Lesnicki, V. & Mercer, A., 1993)
- The Region reported significant odour complaints concerning the Region's leaf and yard waste composting facility. The effect has been mitigated with the private contracting of facility operations. (Lesnicki, V. & Mercer, A., 1993)
- One privately owned composting facility is concerned that business may be suffering because of waste being hauled over the border to the U.S. (Scott, J., 1993)

- One in-vessel facility had an odour problem which has since been mitigated. (Rhodes, J., 1993)

3.8.7 Reuse Centres and Activities

The implications of Reuse Centres and Activities are assumed to be the same as those for Residential Recycling and Collection, as discussed in Section 3.8.2.

3.8.8 Public MRF's

- Fourteen percent of GTA residents surveyed would be concerned about air pollution and eleven percent would be worried about the possible effects on human health of a local MRF. (Environics, 1990)
- Fewer than ten percent would be concerned about the noise (8 percent), the traffic of garbage trucks (6 percent), the odours (5 percent), the location (4 percent), or improper operation (4 percent). Three percent (each) would be troubled by the general environmental impacts, and its appearance. (Environics, 1990)

Durham Region

- A litter effect at the MRF has been mitigated. (Watson, P., 1993a)

Metro Toronto

- There have been no complaints registered regarding the operation of the MRF. (Pollock, A., 1993)
- A litter effect at the MRF has been mitigated. (Sawyer, B., 1993)

Peel Region

- A Regionally owned but privately operated MRF will be constructed. (Morgan-Fraser, L. & Williams, G., 1993)

Halton Region

- There is no Regionally owned MRF. Region representatives noted that siting an expanded or other waste management/diversion facility is difficult because of the siting process and the need for an appropriate piece of land with an adequate buffer zone. (Lesnicki, V. & Mercer, A., 1993)

3.8.9 Residential Recycling Depots and Transfer Stations

The implications of Residential Recycling Depots and Transfer Stations are assumed to be the same as those for Public MRFs, as discussed in Section 3.8.8.

3.8.10 Residential Promotion, Education and Policies

- None of the Regions surveyed has implemented official or draft 3Rs policies, principles or guidelines. None of the Regions' area municipalities has mandatory 3Rs by-laws. (Schedule C)
- Three out of four Regions surveyed (Durham, Peel and Metro Toronto) indicated that 3Rs initiatives are stalled because they have been waiting for some time for direction, guidelines and policies from the Province. (Watson, P., 1993b; Morgan-Fraser, L. & Williams, G., 1993; Pollock, A., 1993)
- Three Regions (Durham, Peel, Halton) mentioned that people seem to believe that they are participating enough in 3Rs activities and have no more time for increased 3Rs activities. This is seen as a barrier to increased waste diversion. (Watson, P., 1993b; Morgan-Fraser, L. & Williams, G., 1993; Lesnicki, V. & Mercer, A., 1993)

Durham Region

- In the early 90's, the Region conducted a telephone survey to gauge the impact of the Region's 3Rs promotion programs. Perceived obstacles to increased waste diversion in the Residential sector include the public perception that enough is being accomplished through the existing Blue Box program(s). Therefore, the Region feels the need to continue its promotional and educational programs to inform the public of the continued need for waste diversion/management. (Watson, P., 1993b)

Metro Toronto

- Metro Toronto had been preparing detailed draft policies as part of their Draft Waste Management Plan for the SWEAP program, but the IWA announcement has delayed consideration of the Plan. The Plan has not been approved by Council. (Pollock, A., 1993)

Peel Region

- The Region believes there is a need for continued education and promotion to overcome the obstacles to increasing waste diversion in the residential sector. (Morgan-Fraser, L. & Williams, G., 1993)
- The Region feels there is an entanglement of jurisdictional responsibilities between Region and area municipalities, although disentanglement is likely to occur within five years. (Morgan-Fraser, L. & Williams, G., 1993)
- The Region's and municipalities' roles will be established once the MOEE regulations are in place. Among the many inefficiencies and/or barriers to increased waste diversion identified by the Region are:
 - The current division of responsibilities requires more effort to coordinate 3Rs programs and initiatives.
 - If waste collection was centralized, the Region could save money.
 - Disentanglement would free up staff to work on future programs.
 - Streamlined programs would result in employees being more cognizant of their specific responsibilities. (Morgan-Fraser, L. & Williams, G., 1993)
- The Region conducted a waste management survey of residents and businesses which identified a number of obstacles to 3Rs including: people in larger urban centres perceive more of a time constraint to participating in 3Rs programs; reaching people efficiently with communication, advertising and promotion initiatives is difficult in large urban centres, and more difficult with nine or ten different languages represented. (Morgan-Fraser, L. & Williams, G., 1993)

Halton Region

- The Region feels there is an entanglement of jurisdictional responsibilities between

the Region and its area municipalities. (Lesnicki, V. & Mercer, A., 1993)

- The Region feels there is a further need for door-to-door education of residents regarding the 3Rs. (Lesnicki, V. & Mercer, A., 1993)
- The Region is considering water reduction as a 3Rs initiative. (Lesnicki, V. & Mercer, A., 1993)

3.9 Industrial, Commercial and Institutional Attitudes and Behaviours

This section of the report documents the Industrial, Commercial and Institutional 3Rs attitudes and behaviours identified in the GTA and in the Regions. It does not document existing programs in each of the Regions. It is intended to provide an indication of the attitudes and behaviours and can be used as the base on which to project future behaviour and types of social effects. The findings are drawn from: (a) interviews with Regional representatives (Schedule C); (b) interviews with IC&I Association representatives (Schedule D); (c) interviews with waste management facility operators (Schedule E); (d) analysis of case studies; and, (e) review of public opinion surveys, reports and published literature.

3.9.1 Overview of IC&I Attitudes

- Some operators within the IC&I sector want an increased consultative role with the MOEE to communicate their specific concerns, and to have input to policy/guidelines where appropriate. The Metro Toronto Board of Trade, for example, believes that a greater certainty regarding what regulations will be handed down from the Province would increase program implementation. The Board feels it would be helpful for members to be made aware of Provincial proposals or policies being considered for the future. (Colucci, R., 1993)
- The Toronto Construction Association noted the following obstacles to implementing 3Rs initiatives:
 - lack of space on construction sites for source separation;
 - financially not always worthwhile;
 - operationally, not all workers understand or have the time;
 - lack of markets; and
 - occasional contamination of materials by neighbours. (Lasanti, P., 1993)
- As examples of initiatives that would support members' participation in waste

management initiatives, the Canadian Council of Grocery Distributors cited:

- the need to develop a level playing field. The Grocery sector believes it is paying an inequitable portion of societal waste management costs; and,
 - the need for market development for recyclable materials. (Lannon, A., 1993)
- Over the next five years, Halton Region hopes to see an IC&I shared model approach to dividing waste management/diversion costs and responsibilities between the Province and the IC&I waste generators. (Lesnicki, V. & Mercer, A., 1993)
- Metro Toronto Region feels that over the next five years in the IC&I sector:
 - there should be changes in the export situation and marketing of recycled products.
 - to be financially feasible for private sector collection, waste materials must have a high recycling value. Only a few materials currently do. New markets must be identified and encouraged.

Metro Toronto believes that the proposed 3Rs regulations would help with both these issues by limiting export and stimulating new markets. (Pollock, A., 1993)

- The patterns and changes in the recycling behaviour of business offices throughout Canada were the subject of a Decima survey conducted for Pitney Bowes of Canada Limited (1993). The results were based on 706 survey responses from a random sample of Pitney Bowes' 135,000 customers (note: no breakdown provided between small and large businesses). The poll results clearly demonstrated that the level of commitment to the importance of recycling programs was growing. Among the key findings of this survey were:
 - 72 percent of offices in Ontario had recycling programs, representing a 13 percent increase over the previous year.
 - 83 percent of offices in Ontario still felt that their company could do more to be environmentally responsible.
 - Specific activities which had shown increased levels of involvement over the previous year included: two-sided photocopying; bulk buying; recycling soft drink cans; recycling newspapers; and, recycling toner cartridges for copiers, fax machines and laser printers.
 - 79 percent of offices in Ontario supported government legislation requiring

offices to establish recycling programs.

29 percent of offices with recycling programs have formal purchasing plans which favour environmentally friendly products. (Pitney Bowes, 1993)

- All aspects of waste management represent significant costs to the IC&I sector. Sector representatives are generally concerned with the costs of 3Rs initiatives and regulations. (Schedule D)
- IC&I Associations feel that the size of a business is a factor in responding to or developing 3Rs initiatives. Economies of scale are important, with larger IC&I generators likely able to implement programs with relatively greater ease than smaller IC&I generators. For example:
 - the Ontario Restaurant Association maintains that aggressive 3Rs initiatives are more costly for smaller, non-chain restaurants that do not have the financial backing that chain restaurants might have (e.g., McDonalds - Wrigley, C., 1993); and,
 - Members of the Canadian Council of Grocery Distributors, that are part of chains, have more financial and administrative resources than those businesses that are franchises or independent. (Lannon, A., 1993)
- The Ontario Restaurant Association believes that waste audits to identify the types of waste generated by different associations would lead to more effective waste management strategies in large urban centres like the GTA. (Wrigley, C., 1993)
- In the next two years, the Board of Trade of Metropolitan Toronto and member businesses will consider the implementation of further 3Rs initiatives. They recognize that they might be legislated to implement specific 3Rs programs. (Colucci, R., 1993)
- Over the next two years the Canadian Council of Grocery Distributors will be working on an industry packaging stewardship model. (Lannon, A., 1993)

3.9.2 IC&I Collection

- Three Regional governments (Peel, Halton and Metro Toronto) cited the continued cross-border hauling of IC&I waste - because of low U.S. tipping fees - as a barrier to increased waste diversion. There is no incentive for Ontario manufacturers to participate in recycling strategies if they can haul waste over the border at a

significantly lower cost (Morgan-Fraser, L. & Williams, G; Lesnicki, V. & Mercer, A; Pollock, A., 1993).

- IC&I Associations also generally cite tipping fees as a regulation/policy that has created a competitive disadvantage for GTA companies. This also causes a reduction in business for landfill owners in Ontario. The IC&I sector believes that it is unfairly subsidizing waste disposal costs for the residential sector. (Schedule D)
- IC&I Associations generally perceive a lack of support by government and a lack of market infrastructures as obstacles to increasing waste diversion programs in the IC&I sector. (Schedule D)
- The Ontario Restaurant Association feels that the main obstacles to the implementation of 3Rs programs are cost and the lack of municipal infrastructures to support the programs. (Wrigley, C., 1993)
- The Metropolitan Toronto Board of Trade feels that if three-stream waste management plans are cost efficient and environmentally effective methods to deal with waste, then this type of system could be welcomed by business (unlike the Blue Box program which they believe may be somewhat environmentally effective but not at all cost efficient). (Colucci, R., 1993)
- The Metropolitan Toronto Board of Trade feels that the lack of standardization of waste management/collection programs between municipalities creates some competitive disadvantages among member businesses. For example, for restaurants in municipalities where businesses have to pay higher waste collection costs, less money can be redirected into the business and accumulate as profit. (Colucci, R., 1993)
- The Metropolitan Toronto Board of Trade notes that the costs to business for waste management/diversion have been indirectly increased by the Waste Management Act, Provincial restrictions regarding landfill siting, and the prohibiting of incineration and transporting waste to willing host communities. (Colucci, R., 1993)
- More than three-quarters of the respondents to the Canadian Federation of Independent Businesses' (CFIB) survey believed that they needed improved collection of recyclable materials and better availability of recycling depots. This problem, i.e., lack of infrastructure, was by far the single most important concern identified by small business. As well, the Federation noted that while households are assisted with collection by local government, the municipalities often refuse to collect waste from business establishments. (Canadian Federation of Independent Businesses, 1991)

- The Canadian Federation of Independent Business also feels that collection infrastructure is important as many small businesses are and could be served by municipal waste haulage, recyclable collection and toxic taxis. (Mallet, T., 1993)
- The Region of Peel reported no specific Regional or municipal 3Rs by-laws, except IC&I bans on landfill and charges for those who do not comply. (Morgan-Fraser, L. & Williams, G., 1993)
- Halton Region noted that small businesses claim they cannot afford to participate in IC&I waste management/diversion initiatives but they produce too much waste to participate in residential Blue Box programs, which results in inefficient waste diversion and streaming. (Lesnicki, V. & Mercer, A., 1993)
- The Canadian Council of Grocery Distributors is concerned that a possible landfill ban on food would eliminate a reliable disposal option for members, for food that cannot be donated or sold. (Lannon, A., 1993)

3.9.3 IC&I Processing

- The Greater Toronto Home Builders Association's (GTHBA) "Build Green Program" has the objective of promoting and increasing consumer, builder, retailer, and manufacturer awareness of the potential for purchasing and using building materials which have recycled content. The GTBHA has found that:
 - There is significant public interest in the purchasing of good used building materials and products.
 - Bulk recycling bins at construction sites act as magnets for residential waste.
 - Source separation of waste is most difficult when a number of sub-contractors are involved.
 - Waste haulers are concerned with unclear or inconsistently enforced landfill regulations/bans, scale of operations, location of source separation, and availability of markets. (Greater Toronto Home Builders' Association, 1991b)
- The Ontario Restaurant Association feels that there could be some legal liability problems in executing 3Rs programs for restaurants, in that there are health concerns/risks in storing food waste and a lack of storage space for this waste in most restaurants. The Canadian Council of Grocery Distributors also feels that health & hygiene, safety, and space issues are obstacles standing in the way of members' implementation of 3Rs programs. (Wrigley, C., 1993)

- One IC&I compost facility operation caused significant odour effect for local residents. The facility was shut down until the effects were corrected. (Scott, J., 1993)

3.9.4 IC&I Reuse

- One major restaurant has changed its operations to include a 3Rs program by separating and selling its food waste to a farmer for animal feed. (Wrigley, C., 1993)
- Liability for companies dealing with refillable containers might become an issue in the future depending on what fluid is in a container at any one time. (Dvorkin, L., 1993)

3.9.5 IC&I Reduction

- In 1991, the Canadian Federation Of Independent Businesses released a report (CFIB, 1991) entitled, *The Green Grassroots: Small Business And The Environment*. In this report the Federation documented the results of a survey on the increasing environmental awareness and related activities of its membership. The report noted, for instance, that because only 6 percent of the small business sector is involved in manufacturing activities, the most significant small business environmental impacts would come from the generation of landfill waste and packaging. Therefore, the major contribution that small businesses could make towards ensuring environmental sustainability would be to reduce the need for products and packaging and increase the emphasis on recycling. Among the other important survey findings were the following:

- The majority of the Federation membership expressed concern about the state of the natural environment. The areas of concern included everything from air and water quality, to the treatment of garbage and toxic waste, to the erosion of wildlife habitats and farmland.

- Approximately 70 percent of the membership was engaged to some degree in product reuse or recycling. Significantly, 86 percent of the businesses that do recycle receive no assistance from the government in the form of either financing, incentives or collection services.

- The intensity of 3R practices varies somewhat by industry and province, and differences appear to be most dependent on the availability of local 3Rs

infrastructure (e.g., infrastructure more developed in Ontario, Quebec and B.C.).

More than one-third of the respondents reported that 3R practices have meant a minimum 20 percent reduction in the waste they throw out, and one out of seven reported reductions in excess of 50 percent.

Approximately 87 percent of small firms strongly favour measures which would limit the production and use of non-recyclable or non-reusable containers.

The Federation is concerned about the tendency of governments to regulate all businesses (large and small) as one group and households as another. Business regulations which are geared to large firms rely on a complex array of restrictions, permits and penalties. Small firms, on the other hand, often have market impacts which are not much greater than households. For example, small firms of less than 5 employees - which account for 75 percent of all businesses in Canada - are estimated to generate an average volume of waste equivalent to 2 households. But, the Federation states that these businesses are required to adhere to rules designed for much larger firms.

Recycling and reuse initiatives are limited by the lack of collection infrastructure for reusable and recyclable materials. The kinds of options available to households and to large firms are often not available or not cost-effective because of the tremendous economies of scale in waste collection.

The relative costs to small business in meeting government regulations (in both time and money) can be up to 15 times greater for small firms than for larger ones. (Mallet, T., 1993)

Rather than use "big-stick regulatory approaches" to enforce changes, governments should focus on facilitating change and removing the obstacles to improved environmental behaviour for business and for the public. (Mallet, T., 1993)

It is "wrong" to assume that an economy could adjust to a flood of environmental legislation without an effort to develop a "sustainable economy" as well as a sustainable environment. (Mallet, T., 1993)

The inability of government to make timely and consistent rulings is seen as the major problem small firms have regarding regulation.

- IC&I Association members generally support waste reduction as a goal for the associations and individual member businesses. Among members of the Ontario Restaurant Association, for example, there is strong support for waste reduction as a business goal, if only to avoid having to pay high tipping fees. (Wrigley, C., 1993) And, the Packaging Association representative noted that ninety percent of member businesses are supportive of waste reduction as a goal for individual businesses. (Dvorkin, L., 1993)
- The Packaging Association of Canada has developed a National Packaging Protocol (NAPP) concept and a Task Force with the goal of harmonizing regulations and guidelines. The Association participates in OMMRI and Provincial initiatives, and follows international issues such as the possible harmonization of packaging practices in North America. For example, the Association is lobbying California to change its 65 percent required recycled content in glass bottles. (Dvorkin, L., 1993)
- Some businesses have installed retrofits for machinery as a waste reduction initiative. (Colucci, R., 1993)
- The Packaging Association of Canada believes that some 3Rs regulations/guidelines and principles have adversely affected member businesses. They are:
 - Deposit systems discourage Blue Box use; there is a need for profitable Blue Box items;
 - Purchasing policies by government that support recycled content are lacking; and,
 - The general Association belief is that government does not understand the economies of scale necessary to develop recycling industries. (Dvorkin, L., 1993)

3.9.6 IC&I Programs

- The Provincial Management Board Secretariat's (MBS) "Green Workplace" Program is primarily intended to integrate the 3Rs of waste management, energy and water conservation, environmentally-sensitive purchasing and building specifications, and air quality and hazardous materials management into government's day-to-day operations. The programs include procurement, recycling, composting, green product labelling, and some other pilot projects. The Program had achieved a 50 percent reduction in waste by 1992.

As a major force in the market, MBS must be sensitive to the fact that in a

difficult economic climate, reduction is perceived as a threat to jobs in packaging and related industries. To minimize this perceived impact, recycling and reuse are being promoted in combination with reduction. (Crawford, C., 1993, 1994)

- Loblaws Grocers Limited has found that:
 - While the percent diversion varies from store to store; overall Loblaws recycles 80 percent - 85 percent of its waste.
 - Costs vary from store to store, but overall there has been a positive return on investment.
 - Six factors have made the waste management program successful: (1) Proper attitude and dedication by employees, (2) Dedication by senior management to being a good corporate citizen, (3) Proper education and training of staff, (4) Genuine ethical concern for the environment, (5) Economic savings, and (6) Positive relationship between labour and management.
 - Such a program is very applicable to other grocery chains. However, all stores will need to develop programs to their unique circumstances. Smaller and older stores will have a more difficult time due to a lack of space for materials and equipment.
 - Loblaws still has significant concerns over possible re-fillable bottle legislation. (Mulhall, K., 1993, 1994)
- Sunnybrook Hospital has contracted its environmental services program to a waste management company since 1991. Recycling planning is done in co-ordination with eleven other regional hospitals in Ontario. So far:
 - The hospital is currently achieving 33-36 percent diversion, with a 50 percent target for the end of 1993.
 - The program has received overwhelming staff support.
 - A key concern is the lack of storage space for recyclables.
 - 95 percent of the bio-medical waste is treated in a sterilizer (that eliminates any hazards) and is subsequently landfilled. Sharps, chemotherapy wastes, and pathological wastes are sent to the incinerator.
 - The program should be applicable to other hospitals with the combination of enthusiasm and a good management strategy. (Martin, M., 1993)
- The Packaging Association noted that cost-competitiveness was rated as the most important influencing factor for member businesses' involvement in 3Rs initiatives, although it was also noted that, currently, 3Rs initiatives are not easily implementable. To support members' increased participation in 3Rs programs, the Packaging

Association would like to see the following:

- . Government procurement of recycled products;
- . Tax incentives for recycling research and development;
- . Cooperative enterprises between business and government; and,
- . Harmonization of regulations. (Dvorkin, L., 1993)

3.9.7 IC&I Promotion & Education

- IC&I Associations have developed or provided educational/promotional materials to their members on 3Rs. For example, The Metropolitan Toronto Board of Trade produced a Waste Management Code of Practice which members were encouraged to adopt, and the Board continues to publish a monthly magazine in which there have been articles relating to successful 3Rs programs implemented by member businesses. (Colucci, R., 1993)
- The Metro Board of Trade representative noted the lack of education and of a necessary infrastructure as significant obstacles to adopting 3Rs programs. (Colucci, R., 1993)
- The Canadian Federation of Independent Business' role in waste management for its members includes: conducting an environmental survey and distributing the results to businesses; publishing an environmental checklist for small businesses in cooperation with Pollution Probe; and, participating in the Canadian Standards Association's development of Environmental Management Standards that recognize small business needs. The Federation cited the following as important factors for the IC&I sector in establishing a waste management strategy for large urban areas: fairness of costs, consistent regulations and "pay-per-use." (Mallet, T., 1993)
- The Toronto Construction Association has provided to member businesses: education (seminars, information sharing); representation to MOEE (comments on policy and papers); and, involvement in developing a code of ethics. (Lasanti, P., 1993)
- The Toronto Board of Education has the following priorities over the next two years: full participation and cooperation of staff and students in the 3Rs initiatives outlined in the Recycling Handbook, and increased awareness of what is being thrown out (through audits). The Board feels that implementation of a MOEE reporting mechanism that would require every school to document its 3Rs activities, and continued funding for waste diversion programs, would help to support participation in 3Rs activities. (Foster, M., 1993)

3.9.8 Focus Group Research

The following summary is based on the Informa Inc. (1994) report on the IC&I Focus Group Research (prepared for Hardy Stevenson and Associates).

The following themes were evident:

- Economic imperatives drive the private sector. Recycling can only be an effective form of waste reduction when markets have been put in place. Currently, there are limited rewards/incentives in place to expand 3Rs programs.
- Funding and training are needed to create effective 3Rs programs management support.
- Education and training are essential because the 3Rs programs in some organizations are being designed and operated by people with incomplete knowledge.
- Organizations cannot operate 3Rs programs in isolation from their suppliers and consumers, e.g., the greater the cost of the 3Rs program, the greater the product or service.
- Public attitudes are impeding the expansion of 3Rs programs, i.e., are so preoccupied with the Blue Box that other, possibly more effective solutions, are not getting the attention they deserve.
- The prospect of increased illegal dumping of materials is a concern related to expanded 3Rs programs. Many businesses find that others are dumping in their recycling bins, increasing costs and contaminating the recyclable stream.

As well, the IC&I Focus Groups identified the following concerns with respect to the 6 different IC&I 3Rs systems:

System 1 - Existing IC&I System

Some waste management coordinators are questioning the benefits of recycling. Recyclables represent a low proportion of the waste stream and the market infrastructure is undeveloped. However, some programs are diverting as much as 50% of the waste stream.

System 2 - Existing/Committed

This system was criticized for being too heavily weighted to recycling and not enough to reduction and reuse. There was general agreement that System 2 was workable. There was

less support for mandatory source separation.

System 3 - Extended 3Rs Regulations

There were some strong opinions expressed on the escalating importance of recycling as a means of minimizing waste. It only makes sense, it was argued, if there are ready markets for the materials. Extra training and inducements might be required to get staff to comply.

System 4 - Expanded 3Rs Regulations

The focus on recycling in this scenario also evoked criticism. Because it was believed to cover 90% of the IC&I sector, it was seen as a bigger problem. It was felt that this system would require an expanded enforcement arm because organizations would be compelled to comply.

System 5 - Expanded 3Rs Regulations with Organics

Large generators of organics were enthusiastic about this system. However, they felt the definition needed broadening to include dry compostables. As well, the feasibility of the program was questioned, given current public opposition to large composting facilities. Others seriously questioned the composting emphasis, arguing that there would be no markets for this material and that it might cause greater environmental damage.

System 6 - No Unprocessed Waste to Landfill

A costly double sorting system was envisaged - source separation plus sorting by haulers. It was felt that the costs of this system might drive businesses out of the Province. A zero garbage option was seen as totally unworkable and possibly even unnecessary.

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4.0 ASSESSMENT AND EVALUATION OF THE 3Rs SYSTEMS

4.1 Introduction

This chapter presents the social environment assessment and evaluation of the six alternative residential 3Rs systems for each region (except for Halton) and the six alternative IC&I 3Rs systems for the GTA based on: the various system components (Schedule A); the description of the existing social environments in each region (Section 3.0); and, other data sources (Section 2.0).

The residential 3Rs systems are evaluated for each region and the IC&I 3Rs system for the GTA to identify a ranking of the systems from a social environment perspective.

4.2 Overview

The analysis of the potential social environment impacts and the potential social acceptability of the six residential and IC&I systems was based on the application of the analytical methods and data described in Section 2.1 and in Figures 2.2 and 2.3.

The social environment assessment of the 3Rs systems was based on:

- the types of potential effects attributable to the various facilities, collection and processing components of the systems;
- the demographic, housing, employment and attitudinal and behavioural data on residents, municipalities and the IC&I sector; and,
- potential mitigation and enhancement measures.

The evaluation of the 3Rs systems was completed based on the ranking of the social environment criteria and the net effects of each system (after the application of mitigation and enhancement measures). The following sections outline the three key tasks involved with the assessment and evaluation of the 3Rs systems.

4.2.1 Criteria Ranking

The Social Environment Criteria Group contains three criteria. To assist in identifying a ranking of the 3Rs systems for this criteria group, the first task involved determining the importance of each individual criterion and ranking it relative to the other criteria. In order to rank the criteria, consideration was given to the magnitude, duration and significance of

the types of potential effects likely to occur, the certainty of the effects and the relative difference among alternative systems being examined for the four Regions.

The ranking process for the social discipline concluded that, without extensive public input, no one criterion could be determined to be more important than the others. For example, although there was greater certainty about the types of potential net local community impacts than other criteria, there was less certainty about the magnitude of those impacts. Consequently, all three criteria (i.e., Potential Local Community Impacts, Potential Broad Social Impacts and Distribution of Social Costs and Benefits) were ranked the same.

The Social Acceptability criterion is one of four criteria in the Service Criteria Group (the others being: Reliability, Flexibility, and Performance). It is ranked by the 3Rs Analysis study team as second in importance behind Reliability and Performance. It provides an indication of the level of public acceptance of a system; for instance, whether residents are likely to participate in source separation and other programs that are fundamental to ensuring diversion performance, or whether or not the public is likely to accept tax increases to pay for the system.

4.2.2 System Net Effects Analysis

The second task was the "system net effects" analysis of the six residential 3Rs systems for the Regions of Durham, Metro Toronto, York and Peel. Six alternative 3Rs systems were also developed for the institutional, commercial and industrial (IC&I) sectors for the GTA as a whole. The GTA was the geographic focus for IC&I systems because there is no effective waste management boundary for IC&I waste and recyclables among the Regions.

Each system is comprised of components (see Schedule A) which describe the collection and processing of waste materials and other supporting activities (e.g., education and promotion). Household 3Rs components considered within a system can include, for example, any combination of taking your own waste to a recycling centre, using a Blue Box and/or home composting. Each system, other than the Existing and Existing/Committed Systems, is named after the dominant component in the system; for example, the system with the dominant characteristic of expanded Blue Box use was referred to as System 4 (Expanded Blue Box).

Because the components of the systems were similar for the four Regions, the analysis of net effects of the resident systems was completed at a generic level. At this level, the types of effects that might be expected for people, businesses and institutions in any part of the GTA are identified, i.e., effects could occur for any of the regions.

Potential effects, measures available to mitigate effects and resultant net effects (those effects remaining after mitigation measures were applied) were identified for each component

category (e.g., net effects of residential composting) within a residential System (e.g., System 5 Wet/Dry).

This generic analysis was completed for each indicator of the three criteria within the Social Environment Criteria Group and the generic net effects for each indicator were presented in Generic Net Effects Tables (Schedule F). For example, for System 5 (Wet/Dry) for the criterion *Potential Local Community Impacts*, the analysis was completed for each of the indicators: potential effects on residents; potential effects on special/sensitive groups; potential effects on communities; and, potential effects on community features and businesses. The core of the analysis of Potential Local Community Impacts of this system would address: the effects of wet/dry collection and processing on residents, special/sensitive groups, communities and community features and businesses; the type of mitigation measures which could be applied to reduce the severity of the effect; and, the net effects of the Wet/Dry System after the mitigation measures have been applied.

A system net effects analysis was then completed for each individual system for each Region. The generic system net effects were reviewed with respect to the specific regional 3Rs system descriptions to complete a net effects analysis for each individual system for each Region. For example: what effect would System 4 (Expanded Blue Box) have in Durham Region? The net effects for each component category (e.g., residential composting) within a particular system (e.g., within the Expanded Blue Box System) were then combined for each criterion indicator into system net effects by indicator (see second column, Table 4.1). For example, when looking at the potential net effects of the 3Rs system components for the indicator, "potential effects on residents", what will be the effects of System 4 (Expanded Blue Box) components on residents?

The system net effects for each indicator of each Social Environment Group Criterion were then combined into system net effects by criterion (see third column, Table 4.1). In this step, for instance, Local Community Impacts were judged to be apparent for a system (e.g., Expanded Blue Box) because this system had potential impacts on local residents and special/sensitive groups. The net social effect related to each social environment criterion was then listed for each system in the System Net Effects Tables (see Table 4.1).

Once the net effects assessment was completed for each 3Rs system within a region, the six systems were then evaluated. This involved looking across the systems and observing which system tended to have the greatest potential for social effects identified for each criterion. The net advantages/disadvantages of each system, relative to other systems were then developed by criterion. For example, System 4 (Expanded Blue Box) might have a lower social effect in terms of Potential Local Community Impacts than System 5 Wet/Dry. Net effects common to all systems were not carried forward as advantages or disadvantages because they were not useful in comparing systems. For example, if "community stigma

TABLE 4.1
SYSTEM NET EFFECTS : SOCIAL ENVIRONMENT

SAMPLE

REGIONAL MUNICIPALITY : _____

System : _____

Criteria/Indicator	System Net Effects by Indicator	System Net Effects by Criterion	Advantages/Disadvantages by Criterion
Criterion 1 : Potential Local Community Impacts			
Potential effects on residents			
Potential effects on special/sensitive groups			
Potential effects on communities			
Potential effects on community features and businesses			

associated with a 3Rs MRF" was common to all systems it was not brought forward. By comparing the relative advantages and disadvantages among the six systems, the systems were ranked for each of the three social environment criteria.

The system rankings for each criterion were then considered. For this step, System 1 (Existing) potentially might have had the highest Local Community Impacts and lowest Broad Social Impacts compared to System 4 (Expanded Blue Box). The relative differences and trade-offs among the systems were examined based on the differences among the potential net effects. This involved comparing each system and assessing whether a system that had high social effects related to Local Community Impacts and Broad Social Impacts was better or worse than another system that had a high Local Community Impact and medium Broad Social Impact. The result was the development of the overall system rankings for each Region within the Social Environment Criteria Group.

A similar net effects assessment and evaluation of alternative 3Rs systems was completed for the IC&I sector. However, generic systems and net effects were not developed on a Regional basis. Rather, the IC&I systems were developed for the GTA as a whole. Consequently, the system net effects tables by component completed for the IC&I sector are for the entire GTA and were not completed on a generic basis.

4.2.3 Mitigation and Enhancement

The third task involved the application of mitigation and enhancement measures.

Potential positive and negative effects of the 3Rs systems were identified. However, the possibility exists to avoid, minimize and mitigate the potential social effects to reduce their severity. It is also possible to enhance and increase potential positive effects. Therefore, mitigation, management and enhancement measures were included as part of the social environment assessment, and were applied at a generic level of analysis in the Generic Net Effects Tables in Schedule F.

The formulation of site specific mitigation measures (i.e., mitigation measures which could be applied in a specific neighbourhood) was not undertaken because sites for 3Rs facilities have not been identified. However, it is possible to identify:

- the types of potential effects of all the systems components;
- possible mitigation and enhancement measures; and,
- the potential net effects.

There are potential effects associated with some of the system components that are unlikely to be fully mitigated (e.g., disruption effects on residents and businesses near some facilities resulting from the transportation and processing of recyclable materials). In other cases, where there is uncertainty about the magnitude and significance of the potential effect, mitigation or enhancement measures are outlined in general terms. For example, attempts will be made to reduce effects due to truck traffic associated with all types of facilities. Where these cases occur, the net effect is noted and carried forward to the regional net effects analysis. In cases where mitigation and/or enhancement measures are expected to be successful in eliminating or minimizing the effect, the potential net effect is not carried forward to the regional net effects analysis.

4.2.3.1. Types of Mitigation and Enhancement Measures

Mitigation and enhancement measures were applied to the potential generic net effects for each system component. These measures are discussed below for the three social environment criteria: Potential Local Community Impacts; Potential for Broad Social Impact; and, Distribution of Social Costs and Benefits. The system components are listed in Schedule A.

Potential Local Community Impacts

Potential Local Community Impacts are described by four types of effect: 1) potential effects on residents; 2) potential effects on special/sensitive groups; 3) potential effects on communities; and, 4) potential effects on community features and businesses. Most of these will result from facility siting and operation. While the possible mitigation measures vary in response to the different characteristics of the facility, the typical mitigation measures fall into two categories: mitigation measures to address displacement effects and measures to address disruption effects.

Displacement effects have to do with the possibility of residents, businesses and community features possibly having to move because of the location of new facilities. The mitigation measures for new facilities typically include proper facility siting in areas of compatible land use and ensuring a fair site selection process.

The second category is mitigation applied to disruption effects. These measures address disruption from nuisance types of effects (litter, noise, visual, traffic, etc.) and from potentially more significant effects such as odour and potential health hazards associated with new and existing facilities. 3Rs system components that might include these effects are: depots, community recycling centres, reuse centres, transfer stations, MRFs, leaf and yard waste composting facilities, wet/dry facilities and mixed waste processing and composting

facilities. The level of effect could vary according to the size and characteristics of the facility. Typical mitigation measures could include proper siting and management, state-of-the-art odour control features, consultation with local residents and businesses to address their concerns, and community and health monitoring of the facility operations. However, all potential disruption effects are unlikely to be fully mitigated.

Potential for Broad Social Impact

The Broad Social Impact criterion is concerned with four types of social effect:

- potential for lifestyle change;
- potential effect on employment opportunities;
- potential effect on economic development opportunities; and,
- potential effect on institutions, commercial enterprises and industry.

In contrast to the Local Community Impact criterion, this criterion addresses potential effects on people on a Region-wide basis.

For the purposes of mitigation and enhancement, the effects on employment and economic development opportunities are treated the same. Any increase in employment or improvement in economic development opportunities is considered a benefit and mitigation is not required.

For the other two indicators, nuisance effects are typically experienced at the household or individual business level from waste diversion activities. They can include nuisances associated with composters, wet/dry carts, and composting and recycling programs in multi-family buildings. They also can create the potential for region-wide lifestyle change at the household level, for example, the type of lifestyle change that occurred with the introduction of the original Blue Box). Mitigation measures include strong promotion and education programs to ensure proper management and handling of the material at the household. The programs are assumed to be targeted to all language groups. Other mitigation measures identified include allowing apartment owners/managers to select the system which is suitable to the building and its management.

Distribution of Social Costs and Benefits

The potential effects identified for this criterion address the fairness of the allocation of the effects attributable to the system components. Distribution of Social Costs and Benefits is concerned with three types of effect: 1) Distribution of socioeconomic effects on industry and population groups; 2) Distribution of lifestyle effects; and, 3) Potential future generation effects. Essentially, it addresses the question: are there any groups or individuals who are generally going to experience more social impacts than other groups or individuals after

mitigation and enhancement measures are applied? The mitigation measures identified for the other two criteria are also applicable to this criterion. For example, a negative distribution effect due to facilities could be mitigated by proper siting of facilities and community impact management. While the mitigation measure will reduce the effects, a net negative effect for some groups could remain.

Distribution of Social Costs and Benefits also included the indicator, "potential effects of the system on future generations." Promotion and education were seen to be important enhancement measures because promoting the involvement of the current generation in maintaining and conserving environmental quality should support the needs of future generations.

Social Acceptability

The three social acceptability indicators are:

- participation in 3Rs;
- attitudes and perceptions towards 3Rs; and,
- willingness to pay.

Thus, if people will participate in a particular 3Rs activity; if they are likely to be positively inclined toward the 3Rs component and if they are likely to be willing to pay for the implementation of the 3Rs activity, then the activity is seen to be socially acceptable.

Enhancement and mitigation measures that may be applied to improve acceptability include, public consultation, 3Rs promotion and education and measures to address inconveniences to residents and businesses. These measures could enhance participation and positive attitudes by presenting the benefits of being involved in waste diversion activities and providing residents with instructions on how to participate effectively. For example, proper instructions will ensure that residents will properly understand how to manage their composters.

4.3 Assessment and Evaluation

Ranking of Systems by Criterion

The System rankings by criterion were based on the "system net effects by criteria" and "advantages/disadvantages by criteria" contained in the individual System Summary Net Effects Tables (Schedule B).

Net effects common to all systems were not carried forward to the evaluation of the system options because they do not assist in distinguishing between systems. Although the systems are named for the dominant element of the system (e.g., Expanded Blue Box), the evaluation was based on the entire system and all of its components (see Schedule A). The system rankings for the three Social Environment Criteria are discussed below and summarized in the appropriate Tables (by Region). The overall system rankings can be found in the top row of the Tables.

For the purpose of the Social Environment evaluation, Systems 6A and 6B were considered to be essentially the same and are referred to as System 6.

4.3.1 Durham Region

4.3.1.1 Social Impact Criteria

The overall ranking for residential 3Rs systems and the ranking for each criterion are presented in Table 4.2 for the social environment. The table also outlines some of the key potential net effects identified for each criterion. The text below presents the comparative evaluation among the systems.

Potential Local Community Impacts

Potential Local Community Impacts can be anticipated in Durham Region as a result of siting new 3Rs facilities and from the expansion and increased use of existing facilities. However, the potential effects of expanded use of existing facilities were taken to be the same for System 1 (Existing), System 2 (Existing/Committed), System 3 (Direct Cost) and System 4 (Expanded Blue Box), and did not lead to one system being ranked over another for this potential effect.

Systems 1 (Existing), 2 (Existing/Committed) and 4 (Expanded Blue Box) were all ranked highest because they require the same existing facilities and a new MRF. Systems 5 (Wet/Dry) and 6 (Mixed Waste Processing) require other additional facilities with potentially more significant local community impacts.

System 3 (Direct Cost) was ranked second highest. While it has the same facilities as Systems 1, 2 and 4, and has the same types of effects as these systems, there is the potential for additional disruption effects from illegal dumping and burning to occur, as residents may react negatively to paying for garbage disposal. Although the significance of the effect is uncertain, the magnitude of illegal dumping may create local community effects in Durham Region greater than Systems 1, 2 and 4.

System 5 (Wet/Dry) was ranked second lowest because it has potential displacement and disruption effects associated with the new wet/dry composting facility. While the existing leaf and yard waste composting site would be closed, the effects from the new facility have the potential to be more significant for local communities.

System 6 (Mixed Waste Processing) was ranked the lowest because it has the greatest potential for displacement and disruption effects. In addition to the facilities in place for Systems 1-4, this System will also include a mixed waste processing and composting facility. It is expected that the effects of this facility will be more significant for local communities than the effects of the centralized wet/dry composting facility of System 5.

Potential for Broad Social Impact

The systems were evaluated based on their potential positive and negative social impacts on the Region's broad social environment in terms of the lifestyle of people, and the direct employment and economic development opportunities in the Region. An important consideration in lifestyle change is the level of personal involvement in the management of the household waste; the greater the personal involvement, the more beneficial the lifestyle is taken to be for reducing, reusing and recycling waste.

System 4 (Expanded Blue Box) was ranked highest because it is a continuation of current lifestyles to support 3Rs and is familiar to residents. This should encourage them to separate a greater number of materials, more frequently and with less error than in the other systems. System 4 also has slightly greater potential for additional minor direct employment and economic development opportunities than Systems 1,2,3 and 5. It is easy to implement and suitable to the low density character of Durham Region. Systems 1 (Existing) and 2 (Existing/Committed) do not provide as many source separation opportunities to the same number of people.

System 3 (Direct Cost) was ranked second highest because it would continue the current change to a lifestyle (through an economic incentive to households) that incorporates higher levels of personal involvement by residents in the management of their wastes. The less desirable aspect of this system is that there is a greater potential for some residents to engage in illegal dumping and burning to reduce the amount of waste for which they have to pay collection costs. However, it is uncertain how the System will encourage higher levels of personal involvement in apartment buildings and in rural areas.

System 5 (Wet/Dry) was ranked third highest because it is uncertain whether the System will achieve a change in lifestyle which incorporates significant personal involvement in the management of waste. The opportunity exists for residents to reduce their involvement and not separate their recyclables and compostables, but instead to put them into the garbage

stream. In addition, this System may be difficult to implement and inconvenient for residents in apartment buildings and in rural areas. Furthermore, there are potentially a number of inconveniences for a variety of groups (such as the elderly) associated with the wet/dry carts. The System has limited potential to provide an increase in direct employment and economic development opportunities.

Systems 2 (Existing/Committed) and 6 (Mixed Waste Processing) were ranked the second lowest because, although they are likely to have some different types and magnitudes of effects, they are likely to have similar potential net effects for Durham Region. The net effect change for these Systems is considered less positive than Systems 3, 4, and 5. System 2 has potential for only a small positive increase in support for a change in lifestyle to more personal involvement of residents in managing their wastes. System 6 has greater potential for employment and economic development opportunities than the other systems, but it may not continue the change in lifestyle to support 3Rs behaviour. If residents participate fully in this System it may pose some inconveniences.

System 1 was the lowest ranked because it would not support the continued change of lifestyles toward greater personal involvement in the management of household waste to the extent that the other systems could. This System also has limited potential to provide a positive effect on direct employment and economic development.

Distribution of Social Costs and Benefits

Potential distributional effects were predicted to occur as a result of lifestyle changes for some groups in Durham Region and as a result of effects on future generations. System 4 (Expanded Blue Box) was ranked the highest due to its overall positive current and future generation effects. It provides 3Rs opportunities to more people than Systems 1 (Existing) and 2 (Existing/Committed), and continues the growth in changes to 3Rs lifestyle/behaviour that should have greater benefit to future generations than Systems 1 (Existing), 2 (Existing/Committed), and 6 (Mixed Waste Processing). It also has the least negative distribution effects because fewer facilities are required than Systems 5 (Wet/Dry) and 6 (Mixed Waste Processing).

System 3 (Direct Cost) was ranked as the second highest. System 3 has the potential for greater benefit to future generations than Systems 1, 2 and 6. The economic incentive should encourage a change in behaviour to support greater reduction, reuse and recycling which should lead to greater conservation of the environment and a reduction in the management of the current generation's waste by the future. However, there is a potential concern that residents may illegally dump and burn waste. Direct Cost has the potential for a negative distributional effect by increasing the financial burden on low income residents. It does not apply in multi-family buildings and its application to rural areas is uncertain. It also has the

most equitable distribution of 3Rs opportunities, equal to Systems 4 and 5, and the least negative effects from facilities, equal to Systems 1, 2 and 4.

System 5 (Wet/Dry) was ranked third highest. This System has the greatest positive distributional effect of 3Rs opportunities, equal to Systems 3 and 4, although there is a concern that it may not be feasible for the elderly, disabled, rural and apartment residents. System 5 also has the greatest possible future generation effects through the wiser use of resources (i.e., reducing, reusing and recycling), equal to Systems 3 and 4. However, this System has the second most significant negative distributional effects from facilities, better only than System 6 (Mixed Waste Processing).

Systems 2 (Existing/Committed) and 6 (Mixed Waste Processing) were ranked equally as the second lowest. System 2 has the second lowest positive effect on future generations with minimal additional support over System 1 (Existing) for changes in lifestyle to encourage greater 3Rs in the present to conserve the environment for the future. It represents a small improvement over System 1 through the provision of 3Rs opportunities to a greater proportion of households. System 6 has the potential for significant negative distributional effects on some residents from the mixed waste processing facility and uncertain potential benefit to future generations through the recovery of more recyclable material from the waste stream with the possibility of influencing behaviour away from the 3Rs. However, it does potentially provide the most equitable distribution of 3Rs opportunities of all the systems, because it is targeted to all housing types.

System 1 (Existing) was ranked the lowest because it is likely to have the least positive distribution effects on future generations by not encouraging a significant change in the lifestyle of the current generation toward greater personal involvement of residents in the management of their wastes. It also does not provide as great an improvement in the distribution of 3Rs opportunities to residents as the other systems. It does have, however, the least potential for negative distribution effects due to facilities.

Overall System Ranking

An overall System ranking for the Social Impact Criteria Group and summary of net effects is presented in Table 4.2.

System 4 (Expanded Blue Box) was the highest ranked system overall, ranking highest for all 3 criteria.

System 3 was ranked second highest overall as it ranked second highest for all 3 criteria.

System 5 (Wet/Dry) was ranked third highest on the basis that it was the third highest ranked for both the Distribution of Social Costs and Benefits and Broad Social Impact criteria. It ranked as the second lowest for Potential Local Community Impact. These rankings, overall, provided input to a ranking of System 5 higher than Systems 1,2 and 6. Although Systems 1 and 2 were ranked higher for Potential Local Community Impacts, the rankings for Potential for Broad Social Impact and Distribution of Social Costs and Benefits were significantly higher for System 5 compared to System 1, and higher compared to System 2.

System 2 (Existing/Committed) was ranked the second lowest. It was ranked the highest for the Potential Local Community Impacts criterion and second lowest for the other two social criteria.

Based on the uncertainties involved in the analysis, a judgement could not be made as to whether System 1 (Existing) or System 6 (Mixed Waste Processing) should be ranked higher. System 1 was ranked the highest for Potential Local Community Impacts and the lowest for both Potential for Broad Social Impact and Distribution of Social Costs and Benefits. System 6 was also ranked the lowest because it was ranked as the lowest for Potential Local Community Impact, and second lowest for both Broad Social Impact and Distribution of Social Costs and Benefits.

4.3.1.2 Social Acceptability

The ranking for the social acceptability criterion is presented in Table 4.3. The table also outlines some of the key potential net effects identified. The text below summarizes the comparative evaluation among the systems.

The social acceptability of each system was evaluated on the basis of the potential effects of the systems on participation, attitudes and perceptions of 3Rs activities and willingness to pay for the system. Based on these indicators, System 4 (Expanded Blue Box) was ranked the highest because Durham residents and municipalities are familiar with the System components and the infrastructure and can be expected to respond more quickly and more positively to the System. System 4 will provide an improved level of service to residents over Systems 1 and 2 which is likely to encourage greater participation. However, the willingness of residents to pay the tax increase (a moderate impact) is uncertain but the increase is lower than for Systems 5 and 6.

System 3 (Direct Cost) was ranked the second highest because it has the potential to encourage greater participation in 3Rs (increased composting and source separation) than other systems because of the economic incentive and it is suitable for the low density urban areas of Durham. There is a greater possibility of illegal dumping and burning (with the

potential for negative attitudes to be developed toward the System) than in the other systems. Also, direct cost charges will not be implemented in apartment households, reducing participation and limiting the potential for a change in attitude to greater support for 3Rs. There is some uncertainty about the willingness of residents to pay the tax increase and about the level of participation by rural residents. In addition, there is greater potential for public controversy than for Systems 1,2,4 and 5.

Systems 1 (Existing) and 2 (Existing/Committed) were the third highest ranked because, although residents are familiar with the components of these Systems, the components are unlikely to stimulate increased participation by individuals in 3Rs activities to the same extent as Systems 3,4 and 5. System 1 costs are likely to be acceptable to residents while the acceptability of System 2 costs is uncertain but System 2 is likely to encourage a minor increase in participation over System 1.

System 5 (Wet/Dry) was ranked second lowest. Despite the increased 3Rs opportunities this System offers, its acceptability is reduced because of the odour, health and vermin effects from food waste composting facilities. It may also be difficult for elderly and disabled groups in Durham Region to participate in this System and the effectiveness of the System in rural areas and apartments is uncertain. The willingness of residents to pay the tax increase is uncertain (higher tax increase than Systems 1-4).

System 6 (Mixed Waste Processing) was ranked lowest because: the mixed waste processing and composting facility operations may not be acceptable due to potential significant odour problems; the System does not encourage source separation and could encourage residents to reduce their participation in some of the components of the System (e.g., Blue Box); and, the significantly higher costs for the mixed waste processing and composting facility are likely to be unacceptable to Durham Region residents and municipalities.

TABLE 4.2

**DURHAM REGION:
RESIDENTIAL SYSTEMS RANKING SUMMARY FOR SOCIAL ENVIRONMENT**

Criteria Group/Criteria	System 1 Existing	System 2 Existing/Committed	System 3 Direct Cost	System 4 Expanded Blue Box	System 5 Wet/Dry	System 6 Mixed Waste Processing
IMPACT¹						
Social	Lowest ranked	Second lowest ranked	Second highest ranked	Highest ranked	Third highest ranked	Lowest ranked
Potential Local Community Impacts	<p>Highest ranked due to:</p> <ul style="list-style-type: none"> potential displacement effects due to new MRF. potential disruption effects due to new MRF and increased use of existing facilities. 	<p>Highest ranked due to:</p> <ul style="list-style-type: none"> potential displacement effects due to new MRF. potential disruption effects due to new MRF and increased use of existing facilities. 	<p>Second highest ranked due to:</p> <ul style="list-style-type: none"> potential displacement effects due to new MRF. potential disruption effects due to new MRF and increased use of existing facilities. additional potential disruption effects from illegal dumping and burning. 	<p>Highest ranked due to:</p> <ul style="list-style-type: none"> potential displacement effects due to new MRF. potential disruption effects due to the new MRF and increased use of existing facilities. 	<p>Second lowest ranked due to:</p> <ul style="list-style-type: none"> potential displacement effects due to new MRF and the new centralized composting facility for wet waste. potential for disruption effects due to new and existing facilities. 	<p>Lowest ranked due to:</p> <ul style="list-style-type: none"> potential displacement effects due to the new MRF and new centralized mixed waste processing and composting facility. potential for disruption effects due to new and existing facilities.

1. Table does not present potential impacts in comparative terms (among systems). See text for comparative evaluation to support the system rankings.

Criteria Group/Criteria	System 1 Existing	System 2 Existing/Committed	System 3 Direct Cost	System 4 Expanded Blue Box	System 5 Wet/Dry	System 6 Mixed Waste Processing
Potential for Broad Social Impact	<p>Lowest ranked due to:</p> <ul style="list-style-type: none"> little or no potential for positive lifestyle change to support increased 3Rs. limited potential for additional employment and economic development opportunities. limited negative lifestyle effects related to inconveniences. 	<p>Second lowest ranked due to:</p> <ul style="list-style-type: none"> limited potential for positive lifestyle change to support increased 3Rs. limited potential for additional employment and economic development opportunities. limited negative lifestyle effects related to inconveniences. 	<p>Second highest ranked due to:</p> <ul style="list-style-type: none"> potential for positive lifestyle change to support increased 3Rs. limited potential for additional employment and economic development opportunities. potential for negative lifestyle effects related to inconveniences (e.g., increased composting). potential for negative lifestyle effects associated with illegal dumping and burning. 	<p>Highest ranked due to:</p> <ul style="list-style-type: none"> potential for positive lifestyle change to support increased 3Rs. limited potential for additional employment and economic development opportunities. minor potential for negative lifestyle effects related to inconveniences (e.g., increased composting). 	<p>Third highest ranked due to:</p> <ul style="list-style-type: none"> potential for positive lifestyle change to support increased 3Rs, but uncertain if the System will realize this potential or lead to reduced participation in source separation. potential for negative lifestyle effects related to inconveniences (associated with wet/dry carts). limited potential for additional employment and economic development opportunities. 	<p>Second lowest ranked due to:</p> <ul style="list-style-type: none"> potential for positive lifestyle change to support increased 3Rs, but may result in reduced household source separation and contamination of the recyclable stream. minor potential for negative lifestyle effects related to inconveniences (e.g., increased composting). potential for additional employment and economic development opportunities.

Criteria Group/Criteria	System 1 Existing	System 2 Existing/Committed	System 3 Direct Cost	System 4 Expanded Blue Box	System 5 Wet/Dry	System 6 Mixed Waste Processing
Distribution of Social Costs and Benefits	<p>Lowest ranked due to:</p> <ul style="list-style-type: none"> limited potential positive benefit to future generations; system offers few 3Rs opportunities to the current generation. limited potential for positive distributional effects; 3Rs opportunities not targeted to all housing types. limited potential for negative distributional effects from facilities. 	<p>Second lowest ranked due to:</p> <ul style="list-style-type: none"> limited potential positive benefit to future generations; system offers few 3Rs opportunities to the current generation. limited potential for positive distributional effects; 3Rs opportunities not targeted to all housing types. limited potential for negative distributional effects from facilities. 	<p>Second highest ranked due to:</p> <ul style="list-style-type: none"> potential positive benefit to future generations through continuing growth in changes to 3Rs lifestyle & behaviour. potentially equitable distributional effects among housing types (e.g., increased composting) but limited by lack of application to multi-family housing. limited potential for negative distributional effects from facilities. potential for negative distributional effects on low income groups. 	<p>Highest ranked due to:</p> <ul style="list-style-type: none"> potential positive benefit to future generations through continuing growth in changes to 3Rs lifestyle & behaviour. potentially equitable distributional effects among housing types (e.g., increased composting). limited potential for negative distributional effects from facilities. 	<p>Third highest ranked due to:</p> <ul style="list-style-type: none"> potential positive benefit to future generations through continuing growth in changes to 3Rs lifestyle & behaviour. potentially equitable distributional effects among housing types (e.g., increased composting), although application to multi-family housing is limited. potential for negative distributional effects due to facilities. 	<p>Second lowest ranked due to:</p> <ul style="list-style-type: none"> potential positive benefit to future generation from highest volumes of waste diverted, but potential for negative effect on future 3Rs behaviour from reduced participation in source separation. potentially equitable distributional effects as 3Rs opportunities targeted to all housing types. potential for negative distributional effects due to facilities.

TABLE 4.3

**DURHAM REGION:
RESIDENTIAL SYSTEMS RANKING SUMMARY FOR SOCIAL ACCEPTABILITY**

Goal/Criteria Group/Criteria	System 1 Existing	System 2 Existing/Committed	System 3 Direct Cost	System 4 Expanded Blue Box	System 5 Wet/Dry	System 6 Mixed Waste Processing
Service¹						
Social Acceptability	<p>Third highest ranked due to:</p> <ul style="list-style-type: none"> maintains existing 3Rs participation as residents and municipalities are familiar with the requirements of the System. not likely to encourage greater individual action. some positive attitudes and perceptions toward 3Rs activities. 	<p>Third highest ranked due to:</p> <ul style="list-style-type: none"> potential for minor positive increase in 3Rs participation because of increased opportunities (e.g., for multi-family residences). generally positive attitudes and perceptions toward 3Rs activities. residents' willingness to pay increased costs of the System uncertain (moderate tax increase). 	<p>Second highest ranked due to:</p> <ul style="list-style-type: none"> potential for greater participation through greater source separation of materials (financial incentive); increased composting opportunities; and, greater promotion and education. direct cost charges not implemented in most multi-family buildings; no additional incentives for these households. 	<p>Highest ranked due to:</p> <ul style="list-style-type: none"> potential for greater participation through: greater source separation of more materials; increased composting opportunities; greater promotion and education; and, targeting of all housing types. 	<p>Second lowest ranked due to:</p> <ul style="list-style-type: none"> potential for reduced participation because of: a variety of inconveniences from collection activities and odour and health concerns related to effects from food waste composting; limited application to high-rise residences; and, uncertain application to rural residences. 	<p>Lowest ranked due to:</p> <ul style="list-style-type: none"> potential for reduced participation because System does not encourage source separation; it could reduce participation in Blue Box and household composting activities.

1. Table does not present potential impacts in comparative terms (among systems). See text for comparative evaluation to support the system rankings.

Goal/Criteria Group/Criteria	System 1 Existing	System 2 Existing/Committed	System 3 Direct Cost	System 4 Expanded Blue Box	System 5 Wet/Dry	System 6 Mixed Waste Processing
Social Acceptability	<ul style="list-style-type: none"> residents likely willing to pay for the System (low tax increase). 		<ul style="list-style-type: none"> difficult to implement composting in multi-family housing and unlikely to significantly increase participation (low proportion of households in Durham). uncertain of implementation of direct cost in rural, self haul areas. potential for public controversy. residents' willingness to pay increased costs of the System uncertain (moderate tax increase). 	<ul style="list-style-type: none"> positive attitudes and perceptions towards 3Rs activities because residents familiar with System requirements. residents' willingness to pay for the System uncertain (moderate tax increase). 	<ul style="list-style-type: none"> potential for negative attitudes and perceptions to the System because of inconveniences and health concerns. people are unwilling, unable or lack knowledge to source separate properly, resulting in potential for contamination of dry stream. residents may be unwilling to pay for the System (moderate to high tax increase). 	<ul style="list-style-type: none"> people are unable, unwilling or lack knowledge to source separate properly, resulting in potential for high contamination of recyclables. potential for negative attitudes and perceptions toward 3Rs as the mixed waste processing and composting facility may be unacceptable to residents. residents likely to be unwilling to pay for the System (high tax increase).

4.3.2 Metro Toronto

4.3.2.1 Social Impact Criteria

The overall ranking for residential 3Rs systems and the ranking for each criterion are presented in Table 4.4 for the social environment. The table also outlines some of the key potential net effects identified for each criterion. The text below presents the comparative evaluation among the systems.

Potential Local Community Impacts

Potential Local Community Impacts can be anticipated in Metro Toronto as a result of siting new 3Rs facilities and from the expansion and increased use of existing facilities. However, the potential effects of expanded use of existing facilities were taken to be the same for Systems 1 (Existing), 2 (Existing/Committed), 3 (Direct Cost) and 4 (Expanded Blue Box) and did not lead to one system being ranked over another for this potential effect.

Systems 1 (Existing), 2 (Existing/Committed) and 4 (Expanded Blue Box) were all ranked highest because they all require the same new facilities (the new leaf and yard waste bunkers in Systems 2-6 were considered minor). Although there is likely to be additional volumes of materials handled at the facilities in System 4, the materials will be mainly dry and the importance of the potential social effects is uncertain. System 5 (Wet/Dry) and System 6 (Mixed Waste Processing) require other additional facilities with potentially more significant local community impacts.

System 3 (Direct Cost) was ranked second highest. Although it requires the same new facilities as Systems 1,2 and 4, and has the same types of effects as these Systems, there is the potential for additional disruption effects from illegal dumping to occur with System 3. Although the significance of the effects is uncertain, the magnitude of illegal dumping may create local community effects in Metro Toronto greater than Systems 1,2 and 4.

System 5 (Wet/Dry) was ranked second lowest because of displacement and disruption effects due to siting and operating the centralized wet/dry composting facility. Effects are also predicted due to the increased volumes of all types of materials and the addition of food waste to the composting stream. The health and odour issues associated with the composting facility may be more significant than with the Systems 1-4. Although the existing leaf and yard waste facilities would be closed, the effects from the new facility have the potential to be more significant for local communities.

System 6 (Mixed Waste Processing) was ranked lowest due to the requirement for two mixed waste processing and composting facilities. The potential displacement effects and the

potential disruption effects related to odour and health concerns are potentially more significant for this System than the other systems.

Potential for Broad Social Impact

The systems were evaluated based on their potential positive and negative social impacts on Metro Toronto's broad social environment in terms of the culture and lifestyle of people, and employment and economic development opportunities. An important consideration in lifestyle change is the level of personal involvement in the management of the household waste; the greater the personal involvement, the more beneficial the lifestyle is taken to be for reducing, reusing and recycling waste.

System 4 (Expanded Blue Box) was ranked the highest because it enables continuation of the change in lifestyle to support 3Rs and residents are familiar with the System. This should encourage residents to source separate more effectively than other systems. It has the potential for greater inconvenience than Systems 1 and 2, but, as most people are willing to take on some inconvenience for actions that they think will improve the environment, the inconvenience associated with this System are not considered significant. Systems 1 and 2 do not provide as many source separation opportunities to as many people. System 4 also has greater potential for minor direct employment and economic development opportunities than Systems 1,2,3 and 5.

System 2 (Existing/Committed) was ranked second highest. The components of this System will be convenient for residents and some components are applicable in high density areas. System 2 has less potential for minor direct employment and economic opportunities than Systems 3-6 and it provides for minor support for a change in lifestyles toward more personal involvement of residents in managing their wastes.

Systems 3 (Direct Cost) and 5 (Wet/Dry) were ranked third highest. System 3 would continue the current change to lifestyle because, by charging for garbage disposal, residents are given an incentive to increase their personal involvement in household waste management and to source separate more consistently. It should help encourage a change to a lifestyle that incorporates 3Rs behaviour. It will also result in a minor increase in opportunities for employment and economic development over Systems 1 and 2. However, in System 3 there is a potential for some residents to engage in illegal dumping to reduce the amount of waste involving collection costs. As well, System 3 does not represent an additional incentive to apartment dwellers to recycle and therefore will not, on its own, lead to increased source separation. This is significant given the large number of apartment dwellers in Metro Toronto.

While System 5 (Wet/Dry) has the potential to bring about a minor increase in employment

and economic development over Systems 1,2 and 3, there is a greater potential for lifestyle conveniences than in Systems 2,3 and 4. It also appears to be difficult to implement in high density households (apartments are a major portion of Metro's housing). Metro's residents are generally older than the residents in the GTA. And, System 5 is likely to have greater potential effects on special/sensitive groups (e.g., elderly and disabled) due to the requirement for all people to use 90 gallon carts for their waste and separated materials.

System 6 was ranked second lowest. It is uncertain as to whether System 6 will achieve a change in lifestyle, as a strong opportunity will exist for residents not to separate their recyclables and compostables and put them into the garbage stream instead.

System 1 was ranked lowest. Although it is the most convenient system, it has very limited potential to support a change in lifestyle to greater personal involvement of residents in managing their waste. It also has limited potential for increasing direct employment and economic development opportunities.

Distribution of Social Costs and Benefits

Potential distributional effects were predicted to occur as a result of lifestyle changes for some groups in Metro and as a result of effects on future generations. System 4 (Expanded Blue Box) was the highest ranked due to its overall positive current and future generation effects. System 4 provides 3Rs opportunities to more people and provides a more equitable distribution of 3Rs opportunities among housing types by providing composting opportunities to multi-family households than Systems 1 and 2. It continues the growth in changes to 3Rs lifestyle/behaviour that should have greater benefit to future generations than Systems 1 and 2. It also has fewer negative distribution effects than Systems 5 and 6 because fewer facilities are required.

Systems 2 (Existing/Committed) and 3 (Direct Cost) were ranked equally as the second highest. System 2 has the second least negative distribution effect from facilities, equal to Systems 3 and 4, and provides 3Rs opportunities to a greater proportion of households than System 1, including households in high density areas. System 3 improves the distribution of 3Rs opportunities over Systems 1 and 2 by providing the opportunity to participate in 3Rs activities to a higher proportion of households, but it provides a lower distribution of opportunities than System 5 because the direct cost charges will not apply to multi-family households.

System 3 has the potential for greater benefit to future generations than Systems 1,2 and 6. The economic incentive should encourage a change in behaviour to support greater reduction, reuse and recycling which should lead to greater conservation of the environment and a reduction in the management of the current generation's waste by the future. System 3 has

the potential for a negative distributional effect by increasing the financial burden on low income residents and it will require acceptance by Metro's range of cultural groups. This System also has the second least negative distributional effects from facilities.

Systems 1 (Existing) and 5 (Wet/Dry) were ranked equally as the second lowest based on the uncertainties associated with the significance and magnitude of the different potential effects of the Systems. System 5 has a greater potential for negative distributional effects from new facilities than Systems 1,2,3 and 4, and a Wet/Dry system in apartment buildings may create long term negative perceptions to 3Rs activities, affecting the 3Rs behaviour of current and future residents. Although System 5 has potential significant benefits to future generations if all residents participate effectively in the System, this is off-set by the large proportion of households in Metro which may not be provided with the full service and the potential for a behavioural change to net source separation.

System 1 (Existing) ranked second lowest because it is likely to have a less positive distribution effect on future generations by not encouraging a significant change in the lifestyle of the current generation toward greater personal involvement of residents in the management of their wastes. It does not provide an improvement in the distribution of 3Rs opportunities to residents compared to other systems. However, it does have the least negative distribution effects that might be caused by facilities.

System 6 (Mixed Waste Processing) was ranked lowest as it has the greatest potential for negative distributional effects on some Metro residents from facilities. There is also the uncertainty of the benefit to future generations through the recovery of more material from the waste stream and the possibility of influencing behaviour away from the 3Rs. The potential for positive benefit to future generations is therefore considered to be less than for the other systems. However, System 6 potentially provides the most equitable distribution of 3Rs opportunities of all systems because it is targeted to all housing types.

Overall System Ranking

The overall system ranking for the Social Impact Criteria Group for Metro Toronto and summary net effects are presented at the top of Table 4.4.

System 4 (Expanded Blue Box) was ranked highest overall because it ranked highest for all three of the Social Impact Criteria.

System 2 (Existing/Committed) was ranked second highest overall. It was ranked highest for Potential Local Community Impacts and second highest for both Broad Social Impacts and Distribution of Social Costs and Benefits.

System 3 (Direct Cost) was ranked third highest overall. It was ranked second highest for Potential Local Community Impacts and Distribution of Social Costs and Benefits and was ranked third highest for Broad Social Impacts.

System 1 (Existing) was ranked as the third lowest because, while it ranked lowest for Broad Social Impacts and second lowest for Distribution of Social Costs and Benefits, these rankings were off-set by a highest ranking for Potential Local Community Impacts.

System 5 (Wet/Dry) was ranked second lowest on the basis that it was second lowest for both Potential Local Community Impacts and Distribution of Social Costs and Benefits and third highest for Broad Social Impacts.

System 6 (Mixed Waste Processing) was ranked lowest because it was ranked as second lowest for Broad Social Impacts but lowest for both Local Community Impacts and Distribution of Social Costs and Benefits.

4.3.2.2 Social Acceptability

The ranking for the social acceptability criterion is presented in Table 4.5. The table also outlines some of the key potential net effects identified. The text below summarizes the comparative evaluation among the systems.

The social acceptability of each system was evaluated on the basis of the potential effects of the systems on participation, attitudes and perceptions of 3Rs activities and the willingness of Metro residents to pay for the system (see Table 4.5). Based on these indicators, System 4 (Expanded Blue Box) was ranked highest because Metro residents and municipalities are familiar with the System components and the infrastructure and can be expected to respond more quickly and more positively to the System. System 4 appears to be more suitable to the broad range of housing density patterns in Metro than either Systems 3 or 5, equal to System 6 and more comprehensive than either Systems 1 or 2. Therefore, System 4 should lead to increased participation, and improved attitudes and perceptions. Residents will likely be willing to pay the tax increase for the System.

System 2 was ranked the second highest because it has greater potential for positive attitudes and participation than System 1; it will not encounter the same potential public controversy as System 3; it does not have the same inconveniences as System 5 which reduce that System's participation; and residents are more willing to pay for this System than System 6.

System 3 (Direct Cost) was ranked third highest. While this System provides greater opportunities than System 2 (Existing/Committed) for composting and source reduction, there

is the likelihood of some initial negative attitudes associated with the Direct Cost System. More importantly, System 3 (Direct Cost) may have little effect in increasing participation in high-rise apartments beyond that of System 2 (Existing/Committed). It will not provide the incentive to these residents to participate and is not likely to increase positive attitudinal change. The Direct Cost System also has a higher potential for illegal dumping than any other System, with the potential for negative attitudes to be developed toward the System.

System 5 (Wet/Dry) was ranked second lowest. In the low-density areas of Metro Toronto, this System may be acceptable with strong participation and some increase in positive attitudes, although some concerns are expected to be expressed about the convenience of the System. Residents will likely be willing to pay the increase in taxes. In Metro's high-density areas (a large proportion of households) this System may create negative attitudes and lead to low participation rates. The concerns are likely to focus primarily on the health, odour and nuisance effects of the "wet" stream, and how it is collected and managed in highrise apartments.

System 1 (Existing) was also ranked second lowest because it provides limited support for continuing positive change in 3Rs behaviours and it provides fewer 3Rs opportunities than any of the other systems. However, it has few negative attitudes associated with the System components; residents are likely willing to pay for the System; and, it has little or no potential for public controversy.

System 6 (Mixed Waste Processing) was ranked the lowest. Due to the potential odour effects, there is likely to be significant opposition to a mixed solid waste processing and composting facility. The components of this System are available to all households (equal to Expanded Blue Box) and it encourages 3Rs involvement. However, there is the potential for the System to deter many people from source separating, reducing their participation in 3Rs and potentially reducing positive attitudes and behaviour to 3Rs. The convenience of disposing of all waste, knowing that it will be separated elsewhere, may prompt some Metro residents to stop separating their waste. Furthermore, residents and municipalities may not be willing to pay the higher tax increase required with this System.

TABLE 4.4

**METRO TORONTO:
RESIDENTIAL SYSTEMS RANKING SUMMARY FOR SOCIAL ENVIRONMENT**

Criteria Group/Criteria	System 1 Existing	System 2 Existing/Committed	System 3 Direct Cost	System 4 Expanded Blue Box	System 5 Wet/Dry	System 6 Mixed Waste Processing
IMPACT¹						
Social	Third lowest ranked	Second highest ranked	Third highest ranked	Highest ranked	Second lowest ranked	Lowest ranked
Potential Local Community Impacts	<p>Highest ranked due to:</p> <ul style="list-style-type: none"> potential displacement effects due to new MRF. potential disruption effects due to new MRF and increased use of existing facilities. 	<p>Highest ranked due to:</p> <ul style="list-style-type: none"> potential displacement effects due to new MRF and leaf and yard waste bunkers. potential disruption effects due to new MRF, leaf and yard waste bunkers and increased use of existing facilities. 	<p>Second highest ranked due to:</p> <ul style="list-style-type: none"> potential displacement effects due to new MRF and leaf and yard waste bunkers. potential disruption effects due to new MRF, leaf and yard waste bunkers and increased use of existing facilities. additional potential disruption effects from illegal dumping and burning. 	<p>Highest ranked due to:</p> <ul style="list-style-type: none"> potential displacement effects due to new MRF and leaf and yard waste bunkers. potential disruption effects due to the new MRF, leaf and yard waste bunkers and increased use of existing facilities. 	<p>Second lowest ranked due to:</p> <ul style="list-style-type: none"> potential displacement effects due to new MRF, leaf and yard waste bunkers and the new centralized composting facility for wet waste. potential for disruption effects due to new and existing facilities. 	<p>Lowest ranked due to:</p> <ul style="list-style-type: none"> potential displacement effects due to the new MRF, leaf and yard waste bunkers and the two new centralized mixed waste processing and composting facilities. potential for disruption effects due to new and existing facilities.

1. Table does not present potential impacts in comparative terms (among systems). See text for comparative evaluation to support the system rankings.

Criteria Group/Criteria	System 1 Existing	System 2 Existing/Committed	System 3 Direct Cost	System 4 Expanded Blue Box	System 5 Wet/Dry	System 6 Mixed Waste Processing
Potential for Broad Social Impact	<p>Lowest ranked due to:</p> <ul style="list-style-type: none"> little or no potential for positive lifestyle change to support increased 3Rs. limited potential for additional employment and economic development opportunities. limited negative lifestyle effects related to inconveniences. 	<p>Second highest ranked due to:</p> <ul style="list-style-type: none"> limited potential for positive lifestyle change to support increased 3Rs. limited potential for additional employment and economic development opportunities. limited negative lifestyle effects related to inconveniences. 	<p>Third highest ranked due to:</p> <ul style="list-style-type: none"> potential for positive lifestyle change to support increased 3Rs. limited potential for additional employment and economic development opportunities. potential for negative lifestyle effects related to inconveniences (e.g., increased composting). potential for negative lifestyle effects associated with illegal dumping and burning. 	<p>Highest ranked due to:</p> <ul style="list-style-type: none"> potential for positive lifestyle change to support increased 3Rs. limited potential for additional employment and economic development opportunities. minor potential for negative lifestyle effects related to inconveniences (e.g., increased composting). 	<p>Third highest ranked due to:</p> <ul style="list-style-type: none"> potential for positive lifestyle change to support increased 3Rs, but uncertain if the System will realize this potential or lead to reduced participation in source separation. potential for negative lifestyle effects related to inconveniences (associated with wet/dry carts), particularly in high density areas of Metro. limited potential for additional employment and economic development opportunities. 	<p>Second lowest ranked due to:</p> <ul style="list-style-type: none"> potential for positive lifestyle change to support increased 3Rs, but may result in reduced household source separation and contamination of the recyclable stream. minor potential for negative lifestyle effects related to inconveniences (e.g., increased composting). potential for additional employment and economic development opportunities.

Criteria Group/Criteria	System 1 Existing	System 2 Existing/Committed	System 3 Direct Cost	System 4 Expanded Blue Box	System 5 Wet/Dry	System 6 Mixed Waste Processing
Distribution of Social Costs and Benefits	<p>Second lowest ranked due to:</p> <ul style="list-style-type: none"> limited potential positive benefit to future generations; System offers few 3Rs opportunities to the current generation. limited potential for positive distributional effects; 3Rs opportunities not targeted to all housing types. limited potential for negative distributional effects from facilities. 	<p>Second highest ranked due to:</p> <ul style="list-style-type: none"> limited potential positive benefit to future generations; System offers few 3Rs opportunities to the current generation. limited potential for positive distributional effects; 3Rs opportunities not targeted to all housing types. limited potential for negative distributional effects from facilities. 	<p>Second highest ranked due to:</p> <ul style="list-style-type: none"> potential positive benefit to future generations through continuing growth in changes to 3Rs lifestyle & behaviour. potentially equitable distributional effects among housing types (e.g., increased composting) but limited by lack of application to multi-family housing. limited potential for negative distributional effects from facilities. potential for negative distributional effects on low income groups. 	<p>Highest ranked due to:</p> <ul style="list-style-type: none"> potential positive benefit to future generations through continuing growth in changes to 3Rs lifestyle & behaviour. potentially equitable distributional effects among housing types (e.g., increased composting). limited potential for negative distributional effects from facilities. 	<p>Second lowest ranked due to:</p> <ul style="list-style-type: none"> potential positive benefit to future generations through continuing growth in changes to 3Rs lifestyle & behaviour. potentially equitable distributional effects among housing types (e.g., increased composting), although application to multi-family housing is limited. potential for negative distributional effects due to facilities. 	<p>Lowest ranked due to:</p> <ul style="list-style-type: none"> potential positive benefit to future generation from highest volumes of waste diverted, but potential for negative effect on future 3Rs behaviour from reduced participation in source separation. potentially equitable distributional effects as 3Rs opportunities targeted to all housing types. potential for negative distributional effects due to facilities.

TABLE 4.5

**METRO TORONTO:
RESIDENTIAL SYSTEMS RANKING SUMMARY FOR SOCIAL ACCEPTABILITY**

Goal/Criteria Group/Criteria	System 1 Existing	System 2 Existing/Committed	System 3 Direct Cost	System 4 Expanded Blue Box	System 5 Wet/Dry	System 6 Mixed Waste Processing
Service¹						
Social Acceptability	<p>Second lowest ranked due to:</p> <ul style="list-style-type: none"> maintains existing 3Rs participation as residents and municipalities are familiar with the requirements of the System. not likely to encourage greater individual action. some positive attitudes and perceptions toward 3Rs activities. 	<p>Second highest ranked due to:</p> <ul style="list-style-type: none"> potential for minor positive increase in 3Rs participation because of increased opportunities (e.g., for multi-family residences). generally positive attitudes and perceptions toward 3Rs activities. residents likely willing to pay for the System (low tax increase). 	<p>Third highest ranked due to:</p> <ul style="list-style-type: none"> potential for greater participation through greater source separation of materials (financial incentive); increased composting opportunities; and, greater promotion and education. direct cost charges not implemented in most multi-family buildings; no additional incentives for these households. 	<p>Highest ranked due to:</p> <ul style="list-style-type: none"> potential for greater participation through: greater source separation of more materials; increased composting opportunities; greater promotion and education; and, targeting of all housing types. 	<p>Second lowest ranked due to:</p> <ul style="list-style-type: none"> potential for reduced participation because of: a variety of inconveniences from collection activities and odour and health concerns related to effects from food waste composting; and, limited application to high-rise residences. 	<p>Lowest ranked due to:</p> <ul style="list-style-type: none"> potential for reduced participation because System does not encourage source separation; it could reduce participation in Blue Box and household composting activities.

1. Table does not present potential impacts in comparative terms (among systems). See text for comparative evaluation to support the system rankings.

Goal/Criteria Group/Criteria	System 1 Existing	System 2 Existing/Committed	System 3 Direct Cost	System 4 Expanded Blue Box	System 5 Wet/Dry	System 6 Mixed Waste Processing
Social Acceptability	<ul style="list-style-type: none"> residents likely willing to pay for the System (low tax increase). 		<ul style="list-style-type: none"> difficult to implement composting in multi-family housing and unlikely to significantly increase participation (significant proportion of households in Metro). potential for public controversy. residents likely willing to pay increased costs of the System (low tax increase). 	<ul style="list-style-type: none"> positive attitudes and perceptions towards 3Rs activities because residents familiar with System requirements. residents likely willing to pay for the System (low tax increase). 	<ul style="list-style-type: none"> potential for negative attitudes and perceptions to the System because of inconveniences and health concerns. people are unwilling, unable or lack knowledge to source separate properly, resulting in potential for contamination of dry stream. residents likely willing to pay for the System (low tax increase). 	<ul style="list-style-type: none"> people are unable, unwilling or lack knowledge to source separate properly, resulting in potential for high contamination of recyclables. potential for negative attitudes and perceptions toward 3Rs as the mixed waste processing and composting facilities may be unacceptable to residents. residents likely to be unwilling to pay for the System (high tax increase).

4.3.3 York Region

4.3.3.1 Social Impact Criteria

The overall ranking for residential 3Rs systems and the ranking for each criterion are presented in Table 4.6 for the social environment. The table also outlines some of the key potential net effects identified for each criterion. The text below presents the comparative evaluation among the systems.

Potential Local Community Impacts

Potential Local Community Impacts can be anticipated in York Region as a result of siting new 3Rs facilities and from the expansion and increased use of existing facilities. However, the potential effects from expanded use of existing facilities were taken to be the same for System 1 (Existing), System 2 (Existing/Committed), System 3 (Direct Cost) and System 4 (Expanded Blue Box) and did not lead to one system being ranked over another for this potential effect.

Systems 1 (Existing), 2 (Existing/Committed) and 4 (Expanded Blue Box) were all ranked highest because they require the same existing facilities and a new MRF. System 5 (Wet/Dry) and System 6 (Mixed Waste Processing) require other additional facilities with potentially more significant local community impacts.

System 3 (Direct Cost) was ranked second highest. Although it has the same facilities as Systems 1,2 and 4, with the same types of effects as these Systems, there is the potential for additional disruption effects from illegal dumping and burning. Although the significance of the effects is uncertain, the magnitude of illegal dumping may create local community impacts in York Region greater than Systems 1,2 and 4.

System 5 (Wet/Dry) was ranked second lowest because of displacement and disruption effects due to siting and operating the centralized wet/dry composting facility. Effects are also predicted due to the increased volume of all types of materials and the addition of food waste to the composting stream. The health and odour issues associated with the composting facility may be more significant than with Systems 1-4. Although the existing leaf and yard waste facilities would be closed, the effects from the new facility have the potential to be more significant for local communities.

System 6 (Mixed Waste Processing) was ranked the lowest because the displacement and disruption effects on residents, special/sensitive groups, community features and businesses and the community associated with a mixed waste processing and composting facility, along with the effects of the MRF and composting facilities of Systems 1-4, are expected to be

more significant than the effects associated with the other systems.

Potential for Broad Social Impact

The systems were evaluated based on their potential positive and negative social effects on the Region's broad social environment in terms of the lifestyle of people, and the employment and economic development opportunities. An important consideration in lifestyle change is the level of personal involvement in the management of the household waste; the greater the personal involvement, the more beneficial the lifestyle is taken to be for reducing, reusing and recycling waste.

System 4 (Expanded Blue Box) was ranked highest because it is a continuation of current lifestyles to support 3Rs and is familiar to residents. This should encourage them to separate a greater number of materials, more frequently and with less error than the other systems. It is easily implemented and suitable to the low density character of York Region. System 4 also has greater potential for additional minor direct employment and economic development opportunities than Systems 1,2,3 and 5. Systems 1 and 2 do not provide as many 3Rs opportunities to as great a number of people.

Systems 3 (Direct Cost) and 5 (Wet/Dry) were ranked as the second highest systems. System 3 should encourage additional change to a lifestyle (through an economic incentive to households) that incorporates higher levels of personal involvement by residents in the management of their wastes. However, in System 3 there is a greater potential for some residents to engage in illegal dumping and burning to reduce the amount of waste for which they have to pay. This disadvantage is off-set by the potential to provide greater incentives to undertake source separation than System 5. And, it is uncertain how Systems 3 and 5 will encourage higher levels of personal involvement in apartment buildings (a low proportion of households in York Region) and rural areas which make up about 20 percent of residents.

Both Systems 3 and 5 will increase the opportunities for direct employment and economic development over Systems 1 and 2. However, it is uncertain if System 5 will achieve a change in lifestyle in York Region that incorporates personal involvement in the management of waste. The opportunity still exists for residents to not separate their recyclables and compostables, but instead to put them into the garbage stream. In addition, System 5 (Wet/Dry) is likely to have greater potential inconveniences for special/sensitive groups (e.g., elderly and disabled) due to the requirement for all people to use 90 gallon carts for their waste and separated materials.

Systems 2 (Existing/Committed) and 6 (Mixed Waste Processing) were ranked second lowest. System 6, along with System 4, has the greatest potential for direct employment and economic development opportunities, but it may not continue the change in lifestyle to

support 3Rs behaviour and may not support further development of the 3Rs (residents will have the option of placing all their waste in the garbage stream). System 2 has limited potential for increased direct employment and economic development opportunities. It is more convenient than Systems 3-6, but has limited support to continue change in lifestyle to more personal involvement in waste management compared to those systems.

System 1 (Existing) was ranked the lowest because it has limited support for a change in lifestyle to greater personal involvement of residents in managing their wastes and limited potential for a positive increase in direct employment and economic development opportunities.

Distribution of Social Costs and Benefits

Potential distributional effects were predicted to occur as a result of lifestyle changes on some groups in York Region and as a result of effects on future generations. System 4 (Expanded Blue Box) was ranked the highest due to its overall positive effects on current and future generations. System 4 provides 3Rs opportunities to more people than Systems 1 and 2 and provides more equitable distribution of 3Rs opportunities among housing types by providing additional opportunities to multi-family households. It continues the growth in changes to 3Rs lifestyle/behaviour that should have greater benefit to future generations than Systems 1,2 and 6. It also has fewer negative distribution effects from facilities than Systems 5 and 6.

Systems 3 (Direct Cost) and 5 (Wet/Dry) were ranked equally as the second highest. Systems 3 and 5 improve the distribution of 3Rs opportunities over Systems 1 and 2 by providing the opportunity to participate in 3Rs activities to a higher proportion of households. System 3 has the potential for greater benefit to future generations than Systems 1,2 and 6. The economic incentive should encourage a change in behaviour to support greater reduction, reuse and recycling which should lead to greater conservation of the environment and a reduction in the management of the current generation's waste by the future. System 3 has potential for a negative distributional effect by increasing the financial burden on low income households. System 5 has a somewhat greater potential for negative distributional effects of new facilities than Systems 1-4. For both Systems the magnitude of effect on future generations is uncertain, but is likely to have greater potential for positive effect than Systems 1,2 and 6.

System 2 (Existing/Committed) was ranked as the third highest. System 2 has the second least positive effect on future generations, the second least negative distribution effects from facilities and the second least positive distribution effects from the distribution of 3Rs opportunities.

System 6 (Mixed Waste Processing) is ranked second lowest for a number of reasons. There is the uncertainty of the benefit to future generations through the recovery of more recyclable material from the waste stream with the possibility of influencing behaviour away from the 3Rs. The potential for positive benefit to future generations is therefore less than for the other systems. System 6 has potentially the most significant negative facility distributional effects on some York residents from the operation of the mixed waste processing and composting facility. However, System 6 potentially provides the most equitable distribution of 3Rs opportunities of all the systems, because it is targeted to all housing types.

System 1 (Existing) was ranked the lowest because it is likely to have lower positive distributional effects on future generations than Systems 2-5 by not encouraging as significant a change in the lifestyle of the current generation toward greater personal involvement of residents in the management of their wastes. It also does not provide as great an improvement in the distribution of 3Rs opportunities to residents as the other systems. However, it has the least negative distribution effects due to facilities.

Overall System Ranking

The overall system ranking for the Social Impact Criteria Group and summary net effects are presented at the top of Table 4.6.

System 4 (Expanded Blue Box) was ranked as the highest system overall. It was ranked the highest for all three criteria.

System 3 (Direct Cost) was ranked second highest overall based on its second highest ranking for all three criteria.

System 5 (Wet/Dry) was ranked third highest on the basis that it was the second highest for both the Distribution of Social Costs and Benefits and Broad Social Impact criteria. It ranked as the second lowest for Potential Local Community Impact. The only significant difference between System 5 and 3 is that for Potential Local Community Impact, System 5 has the additional effects of the new centralized wet/dry composting facility.

System 2 (Existing/Committed) was ranked second lowest overall. System 2 was ranked below System 5 (Wet/Dry) because, although it ranked highest on Potential Local Community Impacts (due to same new facilities as Systems 1,3 and 4), it ranked lower than System 5 for the other two criteria.

Systems 1 (Existing) and 6 (Mixed Waste Processing) were ranked the lowest. Due to some of the uncertainties involved in the analysis for each criterion, a judgement could not be made on which of these two Systems was better than the other. System 1 ranked as the lowest for

Broad Social Impact and Distribution of Social Costs and Benefits, with this disadvantage being off-set by the highest ranking for Potential Local Community Impact. System 6 was ranked the lowest for Potential Local Community Impacts and second lowest for both Potential for Broad Social Impact and Distribution of Social Costs and Benefits.

4.3.3.2 Social Acceptability

The ranking for the social acceptability criterion is presented in Table 4.7. The table also outlines some of the key potential net effects identified. The text below summarizes the comparative evaluation among the systems.

The social acceptability of each system in York Region was evaluated on the basis of the potential effects of the systems on participation, attitudes to and perception of 3Rs activities and willingness to pay for the system (see Table 4.7). Based on these indicators, System 4 (Expanded Blue Box) and System 3 (Direct Cost) were ranked the highest for social acceptability.

System 4 was ranked highest because York Region residents and municipalities are familiar with the System components and the infrastructure, and can be expected to respond more quickly and more positively to the System. System 4 is also suitable for the low density areas of York. In addition, all apartment buildings of more than 6 units will be provided with recycling services, providing an improved level of service to these residents. This will likely encourage greater participation. However, the willingness of residents to pay the tax increase (a moderate impact) is uncertain but the increase is lower than for Systems 5 and 6 and the same as System 3.

System 3 (Direct Cost) was also ranked highest because it has the potential to encourage greater participation in 3Rs than System 1 (Existing) or System 2 (Existing/Committed) and System 4 (Expanded Blue Box). Potential problems in implementing Direct Cost in high-rise dwellings may not be significant in York due to the low proportion of multi-family households (about 11% of households). However, the willingness of residents to pay the tax increase, a moderate impact (equal to System 4), is uncertain. System 3 has the advantage over System 2 and System 4 of potentially encouraging greater participation by individuals and greater behavioural change to support 3Rs due to the economic incentive. The Direct Cost System may be controversial (i.e., perception of being "double taxed").

System 2 (Existing/Committed) was ranked as the second highest because it has greater potential for positive attitudes and participation than System 1; it will not encounter the same potential public controversy as System 3; it does not have the same inconveniences as System 5 which reduce that System's participation; and, residents are more willing to pay for this

System than for Systems 5 and 6.

System 1 was ranked third highest. While this System does not offer the range of 3Rs opportunities identified in the other systems, the costs are acceptable and the possibility of controversy around System components is negligible in comparison with the other systems.

System 5 (Wet/Dry) was ranked second lowest. It has an advantage over Systems 1, 2 and 6 because it has greater potential to encourage stronger positive attitudes and behaviour toward the 3Rs. However, the acceptability of System 5 for York Region residents could be significantly reduced due to odour and vermin effects from the volumes of food waste being composted at the composting facility. There is also increased potential for some groups to participate less due to greater difficulty in using the 90 gallon carts (e.g., elderly and disabled) and for others not to separate food waste (due to the messiness and inconveniences associated with the carts). In addition, the effectiveness of a wet/dry system in rural areas and apartments is uncertain. Most importantly, residents and municipalities will likely be unwilling to pay the significantly higher costs for System 5.

System 6 (Mixed Waste Processing) was ranked the lowest because: the System costs are likely to be unacceptable to residents and municipalities; it does not encourage source separation and could reduce individual participation in some of the components of the System (e.g., Blue Box); and, the mixed waste processing and composting facility may not be acceptable due to potential significant odour problems.

TABLE 4.6

**YORK REGION:
RESIDENTIAL SYSTEMS RANKING SUMMARY FOR SOCIAL ENVIRONMENT**

Criteria Group/Criteria	System 1 Existing	System 2 Existing/Committed	System 3 Direct Cost	System 4 Expanded Blue Box	System 5 Wet/Dry	System 6 Mixed Waste Processing
IMPACT¹						
Social	Lowest ranked	Second lowest ranked	Second highest ranked	Highest ranked	Third highest ranked	Lowest ranked
Potential Local Community Impacts	<p>Highest ranked due to:</p> <ul style="list-style-type: none"> potential displacement effects due to new MRF. potential disruption effects due to new MRF and increased use of existing facilities. 	<p>Highest ranked due to:</p> <ul style="list-style-type: none"> potential displacement effects due to new MRF. potential disruption effects due to new MRF and increased use of existing facilities. 	<p>Second highest ranked due to:</p> <ul style="list-style-type: none"> potential displacement effects due to new MRF. potential disruption effects due to new MRF and increased use of existing facilities. additional potential disruption effects from illegal dumping and burning. 	<p>Highest ranked due to:</p> <ul style="list-style-type: none"> potential displacement effects due to new MRF. potential disruption effects due to the new MRF and increased use of existing facilities. 	<p>Second lowest ranked due to:</p> <ul style="list-style-type: none"> potential displacement effects due to new MRF and the new centralized composting facility for wet waste. potential for disruption effects due to new and existing facilities. 	<p>Lowest ranked due to:</p> <ul style="list-style-type: none"> potential displacement effects due to the new MRF and new centralized mixed waste processing and composting facility. potential for disruption effects due to new and existing facilities.

1. Table does not present potential impacts in comparative terms (among systems). See text for comparative evaluation to support the system rankings.

Criteria Group/Criteria	System 1 Existing	System 2 Existing/Committed	System 3 Direct Cost	System 4 Expanded Blue Box	System 5 Wet/Dry	System 6 Mixed Waste Processing
Potential for Broad Social Impact	<p>Lowest ranked due to:</p> <ul style="list-style-type: none"> little or no potential for positive lifestyle change to support increased 3Rs. limited potential for additional employment and economic development opportunities. limited negative lifestyle effects related to inconveniences. 	<p>Second lowest ranked due to:</p> <ul style="list-style-type: none"> limited potential for positive lifestyle change to support increased 3Rs. limited potential for additional employment and economic development opportunities. limited negative lifestyle effects related to inconveniences. 	<p>Second highest ranked due to:</p> <ul style="list-style-type: none"> potential for positive lifestyle change to support increased 3Rs. potential for additional employment and economic development opportunities. potential for negative lifestyle effects related to inconveniences (e.g., increased composting). potential for negative lifestyle effects associated with illegal dumping and burning. 	<p>Highest ranked due to:</p> <ul style="list-style-type: none"> potential for positive lifestyle change to support increased 3Rs. potential for additional employment and economic development opportunities. minor potential for negative lifestyle effects related to inconveniences (e.g., increased composting). 	<p>Second highest ranked due to:</p> <ul style="list-style-type: none"> potential for positive lifestyle change to support increased 3Rs, but uncertain if the System will realize this potential or lead to reduced participation in source separation. potential for negative lifestyle effects related to inconveniences (associated with wet/dry carts). potential for additional employment and economic development opportunities. 	<p>Second lowest ranked due to:</p> <ul style="list-style-type: none"> potential for positive lifestyle change to support increased 3Rs, but may result in reduced household source separation and contamination of the recyclable stream. minor potential for negative lifestyle effects related to inconveniences (e.g., increased composting). potential for additional employment and economic development opportunities.

Criteria Group/Criteria	System 1 Existing	System 2 Existing/Committed	System 3 Direct Cost	System 4 Expanded Blue Box	System 5 Wet/Dry	System 6 Mixed Waste Processing
Distribution of Social Costs and Benefits	<p>Lowest ranked due to:</p> <ul style="list-style-type: none"> limited potential positive benefit to future generations; System offers few 3Rs opportunities to the current generation. limited potential for positive distributional effects; 3Rs opportunities not targeted to all housing types. limited potential for negative distributional effects from facilities. 	<p>Third highest ranked due to:</p> <ul style="list-style-type: none"> limited potential positive benefit to future generations; System offers few 3Rs opportunities to the current generation. limited potential for positive distributional effects; 3Rs opportunities not targeted to all housing types. limited potential for negative distributional effects from facilities. 	<p>Second highest ranked due to:</p> <ul style="list-style-type: none"> potential positive benefit to future generations through continuing growth in changes to 3Rs lifestyle & behaviour. potentially equitable distributional effects among housing types (e.g., increased composting) but limited by lack of application to multi-family housing. limited potential for negative distributional effects from facilities. potential for negative distributional effects on low income groups. 	<p>Highest ranked due to:</p> <ul style="list-style-type: none"> potential positive benefit to future generations through continuing growth in changes to 3Rs lifestyle & behaviour. potentially equitable distributional effects among housing types (e.g., increased composting). limited potential for negative distributional effects from facilities. 	<p>Second highest ranked due to:</p> <ul style="list-style-type: none"> potential positive benefit to future generations through continuing growth in changes to 3Rs lifestyle & behaviour. potentially equitable distributional effects among housing types (e.g., increased composting), although application to multi-family housing is limited. potential for negative distributional effects due to facilities. 	<p>Second lowest ranked due to:</p> <ul style="list-style-type: none"> potential positive benefit to future generation from highest volumes of waste diverted, but potential for negative effect on future 3Rs behaviour from reduced participation in source separation. potentially equitable distributional effects as 3Rs opportunities targeted to all housing types. potential for negative distributional effects due to facilities.

TABLE 4.7

**YORK REGION:
RESIDENTIAL SYSTEMS RANKING SUMMARY FOR SOCIAL ACCEPTABILITY**

Goal/Criteria Group/Criteria	System 1 Existing	System 2 Existing/Committed	System 3 Direct Cost	System 4 Expanded Blue Box	System 5 Wet/Dry	System 6 Mixed Waste Processing
Service¹						
Social Acceptability	<p>Third highest ranked due to:</p> <ul style="list-style-type: none"> maintains existing 3Rs participation as residents and municipalities are familiar with the requirements of the System. not likely to encourage greater individual action. some positive attitudes and perceptions toward 3Rs activities. 	<p>Second highest ranked due to:</p> <ul style="list-style-type: none"> potential for minor positive increase in 3Rs participation because of increased opportunities (e.g., for multi-family residences). generally positive attitudes and perceptions toward 3Rs activities. residents' willingness to pay increased costs of the System uncertain (moderate tax increase). 	<p>Highest ranked due to:</p> <ul style="list-style-type: none"> potential for greater participation through greater source separation of materials (financial incentive); increased composting opportunities; and, greater promotion and education. direct cost charges not implemented in most multi-family buildings; no additional incentives for these households. 	<p>Highest ranked due to:</p> <ul style="list-style-type: none"> potential for greater participation through: greater source separation of more materials; increased composting opportunities; greater promotion and education; and, targeting of all housing types. 	<p>Second lowest ranked due to:</p> <ul style="list-style-type: none"> potential for reduced participation because of: a variety of inconveniences from collection activities and odour and health concerns related to effects from food waste composting; limited application to high-rise residences; and, uncertain application to rural residences. 	<p>Lowest ranked due to:</p> <ul style="list-style-type: none"> potential for reduced participation because System does not encourage source separation; it could reduce participation in Blue Box and household composting activities.

1. Table does not present potential impacts in comparative terms (among systems). See text for comparative evaluation to support the system rankings.

Goal/Criteria Group/Criteria	System 1 Existing	System 2 Existing/Committed	System 3 Direct Cost	System 4 Expanded Blue Box	System 5 Wet/Dry	System 6 Mixed Waste Processing
Social Acceptability	<ul style="list-style-type: none"> residents likely willing to pay for the System (low tax increase). 		<ul style="list-style-type: none"> difficult to implement composting in multi-family housing and unlikely to significantly increase participation (low proportion of households in York). uncertain of implementation of direct cost in rural, self haul areas. potential for public controversy. residents' willingness to pay increased costs of the System uncertain (moderate tax increase). 	<ul style="list-style-type: none"> positive attitudes and perceptions towards 3Rs activities because residents familiar with System requirements. residents' willingness to pay for the System uncertain (moderate tax increase). 	<ul style="list-style-type: none"> potential for negative attitudes and perceptions to the System because of inconveniences and health concerns. people are unwilling, unable or lack knowledge to source separate properly, resulting in potential for contamination of dry stream. residents may be unwilling to pay for the System (high tax increase). 	<ul style="list-style-type: none"> people are unable, unwilling or lack knowledge to source separate properly, resulting in potential for high contamination of recyclables. potential for negative attitudes and perceptions toward 3Rs as the mixed waste processing and composting facility may be unacceptable to residents. residents likely to be unwilling to pay for the System (high tax increase).

4.3.4 Peel Region

4.3.4.1 Social Impact Criteria

The overall ranking for residential 3Rs systems and the ranking for each criterion are presented in Table 4.8 for the social environment. The table also outlines some of the key potential net effects identified for each criterion. The text below presents the comparative evaluation among the systems.

Potential Local Community Impacts

Potential Local Community Impacts in Peel Region can be anticipated as a result of siting new 3Rs facilities and due to the expansion and increased use of existing facilities. The potential effects from the expanded use of existing facilities were taken to be the same for System 1 (Existing), System 2 (Existing/Committed), System 3 (Direct Cost) and System 4 (Expanded Blue Box).

System 1 (Existing) requires only the addition of the new MRF while Systems 2-6 require facilities in addition to the MRF. As a result, System 1 is expected to have less displacement and disruption effects than the other systems and was ranked highest.

Systems 2 (Existing/Committed) and 4 (Expanded Blue Box) were both ranked the second highest because they require the same new facilities and similar potential local community effects are expected. In these Systems there is only the addition of the community recycling centres in addition to the new MRF.

System 3 (Direct Cost) was ranked third highest. While it has the same facilities as Systems 2 and 4 and is expected to have similar displacement and disruption effects due to these facilities, there is the potential for additional disruption effects from illegal dumping and burning.

System 5 (Wet/Dry) was ranked second lowest because of the potential for displacement and disruption effects due to the construction and operation of the large centralized wet/dry composting facility. This would include the potential for greater odour effects associated with the composting facility and the volume of food wastes expected to be collected and composted. Although existing composting sites will be closed, this may result in additional effects on residents and special/sensitive groups in Peel Region due to odour and health concerns and traffic related effects.

System 6 (Mixed Waste Processing) was ranked the lowest because the displacement and disruption effects on residents, special/sensitive groups, community features and businesses and the community of a mixed waste processing and composting facility along with the effects of the MRF, community recycling centres and composting facilities of Systems 2,3, 4 and 5, are expected to be more significant than the effects associated with the other systems.

Potential for Broad Social Impact

The systems were evaluated based on their potential positive and negative social impacts on Peel Region's broad social environment in terms of the lifestyle of people, and the employment and economic development opportunities. An important consideration in lifestyle change is the level of personal involvement in the management of the household waste; the greater the personal involvement, the more beneficial the lifestyle is taken to be for reducing, reusing and recycling waste.

System 4 (Expanded Blue Box) was the highest ranked because it is a continuation of current lifestyles to support 3Rs and it is familiar to residents. This should encourage residents to separate a greater number of materials, more frequently and with less error than the other systems. It is easy to implement and suitable to the low density character of Peel Region. System 4 also has slightly greater potential for minor additional employment and economic development opportunities than Systems 1-3. Systems 1 (Existing) and 2 (Existing/Committed) do not provide as many source separation opportunities to as great a number of people.

System 3 (Direct Cost) was ranked second highest because it too should continue the current change to a lifestyle (through an economic incentive to households) that incorporates higher levels of personal involvement by Peel Region residents in the management of their wastes. However, there is a greater potential for some residents to engage in illegal dumping and burning to reduce the amount of waste for which they have to pay collection costs. In addition, System 3 does not represent an additional incentive to apartment residents to recycle and is unlikely to contribute to a change in their lifestyle. It is also uncertain how it will be received in rural areas.

System 2 (Existing/Committed) was ranked third highest because it provides for minor changes in lifestyle to more personal involvement of residents in managing their wastes. There is some potential for positive lifestyle change improvement over System 1 and it does not involve the potential for negative lifestyle effects and inconveniences which are found in Systems 5 and 6. The components of the System are convenient for residents and some are applicable in high density areas.

System 5 (Wet/Dry) was ranked second lowest because it is uncertain whether the System will achieve a change in lifestyle in Peel Region that incorporates personal involvement in the management of waste. The opportunity still exists for residents to not separate their recyclables and compostables, but instead put them into the garbage stream. In addition, it is uncertain if the System can be implemented effectively in apartment buildings. System 5 introduces a number of lifestyle inconveniences and effects on special/sensitive groups related to the required sorting and storage of food waste, e.g., elderly and disabled having to use 90 gallon carts for their waste and separated materials. The significance of these inconveniences is uncertain. System 5 has greater potential than Systems 1-3 to increase direct employment and economic development opportunities.

Systems 1 (Existing) and 6 (Mixed Waste Processing) were ranked the lowest because the net change for these Systems is considered less positive than for Systems 2,3,4 and 5. System 1 provides limited support for a change in lifestyle to more personal involvement of residents in managing their wastes and has limited potential for an increase in direct employment and economic development opportunities. System 6 has greater potential than the other systems for minor direct employment and economic development opportunities. However, it may not continue the change in lifestyle to support 3Rs behaviour and may not support further development of the 3Rs (residents have the option of placing all their waste in the garbage stream).

Distribution of Social Costs and Benefits

Distributional effects within Peel Region are predicted to occur as a result of lifestyle changes on some groups in the Region and as a result of effects on future generations. System 4 (Expanded Blue Box) was the highest ranked due to its overall positive current and future generation effects. It provides 3Rs opportunities to more people than Systems 1 and 2, and provides more equitable distribution of 3Rs opportunities among housing types by providing composting and recycling opportunities to multi-family households. It continues the growth in changes to 3Rs lifestyle/behaviour that should have a greater benefit to future generations than Systems 1 and 2. System 4 has fewer negative distribution effects than Systems 5 and 6 because fewer facilities are required.

System 3 (Direct Cost) was ranked as the second highest. System 3 has the potential for greater benefit to future generations than Systems 1,2 and 6. The economic incentive should encourage a change in behaviour to support greater reduction, reuse and recycling which should lead to greater conservation of the environment and a reduction in the management of the current generation's waste by the future. It improves the distribution of 3Rs opportunities over Systems 1 and 2 by providing the opportunity for a higher proportion of Peel households to participate in 3Rs. It provides an incentive to change behaviour to participate more effectively in 3Rs. System 3 does, however, have the potential to increase

the financial burden on low income households.

Systems 2 (Existing/Committed) and 5 (Wet/Dry) were ranked equally as the third highest based on the uncertainties associated with the significance and magnitude of the different potential effects of the Systems. System 2 has the second least positive effect on future generations with some additional support over System 1 (Existing) for changes in lifestyle to encourage greater personal involvement by residents in the management of their waste. It has a small improvement in the provision of 3Rs opportunities to a greater proportion of Peel Region households than System 1, but has a small increase in negative distribution of effects due to facilities in comparison to System 1.

System 5 (Wet/Dry) has a greater potential for negative distributional effects from new facilities than Systems 1,2,3 and 4. However, it has greater potential for a positive effect on future generations than Systems 1,2 and 6 and has a positive distributional effect of 3Rs opportunities.

System 6 (Mixed Waste Processing) was ranked lowest. It has potentially the most significant negative distributional effects on some Peel residents from the operation of the mixed waste processing and composting facility. In addition, there is the uncertainty of the benefit to future generations through the recovery of more recyclable material from the waste stream, with the possibility of influencing behaviour away from the 3Rs. It therefore ranks lowest of all the systems based on its minimal benefit to future generations. It does, however, have the most equitable distribution of 3Rs opportunities as it includes all types of residences.

System 1 (Existing) was also ranked lowest because it is likely to have a low (less potential than Systems 2-5) positive distribution effect on future generations. It does not encourage as much change in the lifestyle of the current generation toward greater personal involvement of residents in the management of their wastes. It also does not provide as great an improvement in the distribution of 3Rs opportunities to residents as the other systems (lowest of all the systems). However, it has the least negative distribution effects due to facilities.

Overall System Ranking

The systems ranking by criteria for Peel Region and summary net effects are presented at the top of Table 4.8.

System 4 (Expanded Blue Box) was ranked the highest overall. It was ranked the highest for the criteria of Potential for Broad Social Impact and Distribution of Social Costs and Benefits and second highest for Potential Local Community Impacts.

Systems 2 (Existing/Committed) and 3 (Direct Cost) were ranked second highest overall. System 3 ranked third highest for Potential Local Community Impacts and second highest for both Broad Social Impact and Distribution of Social Costs and Benefits. System 2 was ranked second highest for Potential Local Community Impacts and third highest for both Broad Social Impact and Distribution of Social Costs and Benefits.

Systems 1 (Existing) and 5 (Wet/Dry) were ranked second lowest. While System 1 was ranked highest for Potential Local Community Impacts, it was ranked lowest for both Broad Social Impact and Distribution of Social Costs and Benefits. System 5 was third highest for Distribution of Social Costs and Benefits and second lowest for both Potential Local Community Impacts and Broad Social Impact.

System 6 (Mixed Waste Processing) was ranked lowest overall because it ranked lowest for all three criteria.

4.3.4.2 Social Acceptability

The ranking for the social acceptability criterion is presented in Table 4.9. The table also outlines some of the key potential net effects identified. The text below summarizes the comparative evaluation among the systems.

The social acceptability of each system was evaluated on the basis of the potential effects of the systems on Peel residents participation, attitudes and perception of 3Rs activities and their willingness to pay for the system (see Table 4.9).

System 1 (Existing), System 2 (Existing/Committed) and System 4 (Expanded Blue Box) were ranked highest. Peel residents are familiar with the System components and can be expected to respond more quickly and more positively to the systems. System 1 has a significantly lower tax increase per household than all other systems and it will maintain the current 3Rs behaviour and participation. However, it is unlikely to encourage greater individual or municipal behaviour to reduce, reuse and recycle waste and will not provide the same level of service to apartment buildings (through services in buildings and the recycling centres).

System 2 has a higher tax increase per household than System 1 (but lower than System 4). It will encourage greater 3Rs behaviour and provides more convenient opportunities for self-haul of recyclables than System 1. However, it does not promote reduction and reuse opportunities to the same extent as Systems 3,4,5 and 6. While System 4 builds on resident and municipal familiarity with the System components, Peel Region residents will likely be unwilling to pay the large tax increase in taxes per household for this System. This potential

unwillingness reduces the overall acceptability of this System.

System 3 (Direct Cost) was ranked the second highest because it has the potential to encourage greater participation in 3Rs (i.e., increased composting and source separation) than System 1 (Existing) and System 2 (Existing/Committed) because of the economic incentive. However, residents will likely be unwilling to pay the large increase in taxes per household for this System; direct charges may not be implemented in multi-family buildings; and, it may be controversial in some municipalities. There is also greater possibility of negative attitudes developing as a result of illegal dumping and burning. This could reduce participation and limit the potential for a change in attitude to greater support for 3Rs. It was ranked higher than System 5 (Wet/Dry) and System 6 (Mixed Waste Processing) because it has greater potential to encourage stronger positive attitudes and behaviour toward 3Rs without the serious acceptability concerns related to facilities.

System 5 (Wet/Dry) is ranked second lowest because, although it offers greater 3Rs opportunities, its acceptability is reduced because residents may be unwilling to pay the high tax increase per household and because of odour and vermin effects from the volumes of food waste at the composting facility. There is also increased potential for some Peel Region groups to participate less due to greater difficulty in using the 90 gallon carts (e.g., elderly and disabled), and for others not to separate food waste (due to the mess and inconveniences associated with the carts). The application and acceptance of the System in apartments and rural areas is uncertain.

System 6 (Mixed Waste Processing) was ranked lowest because the mixed waste processing and composting facility operation may not be acceptable due to odour problems. Also, the System does not encourage source separation and could encourage residents to reduce their participation in some of the components of the System (e.g., Blue Box). In addition, the very high tax increase per household will likely be unacceptable to Peel Region residents and municipalities.

TABLE 4.8

**PEEL REGION:
RESIDENTIAL SYSTEMS RANKING SUMMARY FOR SOCIAL ENVIRONMENT**

Criteria Group/Criteria	System 1 Existing	System 2 Existing/Committed	System 3 Direct Cost	System 4 Expanded Blue Box	System 5 Wet/Dry	System 6 Mixed Waste Processing
IMPACT¹						
Social	Second lowest ranked	Second highest ranked	Second highest ranked	Highest ranked	Second lowest ranked	Lowest ranked
Potential Local Community Impacts	<p>Highest ranked due to:</p> <ul style="list-style-type: none"> potential displacement effects due to new MRF. potential disruption effects due to new MRF and increased use of existing facilities. 	<p>Second highest ranked due to:</p> <ul style="list-style-type: none"> potential displacement effects due to new MRF and community recycling centres. potential disruption effects due to new MRF, community recycling centres and increased use of existing facilities. 	<p>Third highest ranked due to:</p> <ul style="list-style-type: none"> potential displacement effects due to new MRF and community recycling centres. potential disruption effects due to new MRF, community recycling centres and increased use of existing facilities. additional potential disruption effects from illegal dumping and burning. 	<p>Second highest ranked due to:</p> <ul style="list-style-type: none"> potential displacement effects due to new MRF and community recycling centres. potential disruption effects due to the new MRF, community recycling centres and increased use of existing facilities. 	<p>Second lowest ranked due to:</p> <ul style="list-style-type: none"> potential displacement effects due to new MRF, community recycling centres and the new centralized composting facility for wet waste. potential for disruption effects due to new and existing facilities. 	<p>Lowest ranked due to:</p> <ul style="list-style-type: none"> potential displacement effects due to the new MRF, community recycling centres and new centralized mixed waste processing and composting facility. potential for disruption effects due to new and existing facilities.

1. Table does not present potential impacts in comparative terms (among systems). See text for comparative evaluation to support the system rankings.

Criteria Group/Criteria	System 1 Existing	System 2 Existing/Committed	System 3 Direct Cost	System 4 Expanded Blue Box	System 5 Wet/Dry	System 6 Mixed Waste Processing
Potential for Broad Social Impact	<p>Lowest ranked due to:</p> <ul style="list-style-type: none"> little or no potential for positive lifestyle change to support increased 3Rs. limited potential for additional employment and economic development opportunities. limited negative lifestyle effects related to inconveniences. 	<p>Third highest ranked due to:</p> <ul style="list-style-type: none"> limited potential for positive lifestyle change to support increased 3Rs. limited potential for additional employment and economic development opportunities. limited negative lifestyle effects related to inconveniences. 	<p>Second highest ranked due to:</p> <ul style="list-style-type: none"> potential for positive lifestyle change to support increased 3Rs. potential for additional employment and economic development opportunities. potential for negative lifestyle effects related to inconveniences (e.g., increased composting). potential for negative lifestyle effects associated with illegal dumping and burning. 	<p>Highest ranked due to:</p> <ul style="list-style-type: none"> potential for positive lifestyle change to support increased 3Rs. potential for additional employment and economic development opportunities. minor potential for negative lifestyle effects related to inconveniences (e.g., increased composting). 	<p>Second lowest ranked due to:</p> <ul style="list-style-type: none"> potential for positive lifestyle change to support increased 3Rs, but uncertain if the System will realize this potential or lead to reduced participation in source separation. potential for negative lifestyle effects related to inconveniences (associated with wet/dry carts), particularly in high density areas of Peel. potential for additional employment and economic development opportunities. 	<p>Lowest ranked due to:</p> <ul style="list-style-type: none"> potential for positive lifestyle change to support increased 3Rs, but may result in reduced household source separation and contamination of the recyclable stream. minor potential for negative lifestyle effects related to inconveniences (e.g., increased composting). potential for additional employment and economic development opportunities.

Criteria Group/Criteria	System 1 Existing	System 2 Existing/Committed	System 3 Direct Cost	System 4 Expanded Blue Box	System 5 Wet/Dry	System 6 Mixed Waste Processing
Distribution of Social Costs and Benefits	<p>Lowest ranked due to:</p> <ul style="list-style-type: none"> limited potential positive benefit to future generations; System offers few 3Rs opportunities to the current generation. limited potential for positive distributional effects; 3Rs opportunities not targeted to all housing types. limited potential for negative distributional effects from facilities. 	<p>Third highest ranked due to:</p> <ul style="list-style-type: none"> limited potential positive benefit to future generations; System offers few 3Rs opportunities to the current generation. limited potential for positive distributional effects; 3Rs opportunities not targeted to all housing types. limited potential for negative distributional effects from facilities. 	<p>Second highest ranked due to:</p> <ul style="list-style-type: none"> potential positive benefit to future generations through continuing growth in changes to 3Rs lifestyle & behaviour. potentially equitable distributional effects among housing types (e.g., increased composting) but limited by lack of application to multi-family housing. limited potential for negative distributional effects from facilities. potential for negative distributional effects on low income groups. 	<p>Highest ranked due to:</p> <ul style="list-style-type: none"> potential positive benefit to future generations through continuing growth in changes to 3Rs lifestyle & behaviour. potentially equitable distributional effects among housing types (e.g., increased composting). limited potential for negative distributional effects from facilities. 	<p>Third highest ranked due to:</p> <ul style="list-style-type: none"> potential positive benefit to future generations through continuing growth in changes to 3Rs lifestyle & behaviour. potentially equitable distributional effects among housing types (e.g., increased composting), although application to multi-family housing is limited. potential for negative distributional effects due to facilities. 	<p>Lowest ranked due to:</p> <ul style="list-style-type: none"> potential positive benefit to future generation from highest volumes of waste diverted, but potential for negative effect on future 3Rs behaviour from reduced participation in source separation. potentially equitable distributional effects as 3Rs opportunities targeted to all housing types. potential for negative distributional effects due to facilities.

TABLE 4.9

**PEEL REGION:
RESIDENTIAL SYSTEMS RANKING SUMMARY FOR SOCIAL ACCEPTABILITY**

Goal/Criteria Group/Criteria	System 1 Existing	System 2 Existing/Committed	System 3 Direct Cost	System 4 Expanded Blue Box	System 5 Wet/Dry	System 6 Mixed Waste Processing
Service¹						
Social Acceptability	<p>Highest ranked due to:</p> <ul style="list-style-type: none"> maintains existing 3Rs participation as residents and municipalities are familiar with the requirements of the System. not likely to encourage greater individual action. some positive attitudes and perceptions toward 3Rs activities. 	<p>Highest ranked due to:</p> <ul style="list-style-type: none"> potential for minor positive increase in 3Rs participation because of increased opportunities (e.g., for multi-family residences). generally positive attitudes and perceptions toward 3Rs activities. residents may be unwilling to pay increased costs of the System uncertain (moderate to high tax increase). 	<p>Second highest ranked due to:</p> <ul style="list-style-type: none"> potential for greater participation through greater source separation of materials (financial incentive); increased composting opportunities; and, greater promotion and education. direct cost charges not implemented in most multi-family buildings; no additional incentives for these households. 	<p>Highest ranked due to:</p> <ul style="list-style-type: none"> potential for greater participation through: greater source separation of more materials; increased composting opportunities; greater promotion and education; and, targeting of all housing types. 	<p>Second lowest ranked due to:</p> <ul style="list-style-type: none"> potential for reduced participation because of: a variety of inconveniences from collection activities and odour and health concerns related to effects from food waste composting; limited application to high-rise residences; and, uncertain application to rural residences. 	<p>Lowest ranked due to:</p> <ul style="list-style-type: none"> potential for reduced participation because System does not encourage source separation; it could reduce participation in Blue Box and household composting activities.

1. Table does not present potential impacts in comparative terms (among systems). See text for comparative evaluation to support the system rankings.

Goal/Criteria Group/Criteria	System 1 Existing	System 2 Existing/Committed	System 3 Direct Cost	System 4 Expanded Blue Box	System 5 Wet/Dry	System 6 Mixed Waste Processing
Social Acceptability	<ul style="list-style-type: none"> residents likely willing to pay for the System (low tax increase). 		<ul style="list-style-type: none"> difficult to implement composting in multi-family housing and unlikely to significantly increase participation (significant proportion of households in Peel). uncertain of implementation of direct cost in rural, self haul areas. potential for public controversy. residents' likely to be unwilling to pay for the System (high tax increase). 	<ul style="list-style-type: none"> positive attitudes and perceptions towards 3Rs activities because residents familiar with System requirements. residents likely to be unwilling to pay for the System (high tax increase). 	<ul style="list-style-type: none"> potential for negative attitudes and perceptions to the System because of inconveniences and health concerns. people are unwilling, unable or lack knowledge to source separate properly, resulting in potential for contamination of dry stream. residents likely to be unwilling to pay for the System (high tax increase). 	<ul style="list-style-type: none"> people are unable, unwilling or lack knowledge to source separate properly, resulting in potential for high contamination of recyclables. potential for negative attitudes and perceptions toward 3Rs as the mixed waste processing and composting facility may be unacceptable to residents. residents likely to be unwilling to pay for the System (high tax increase).

4.3.5 Industrial, Commercial and Institutional Sector

Ranking of Systems by Criterion

In order to determine ranking within the Social Impact Criteria Group of the 3Rs systems for the IC&I sector in the GTA, the system alternatives were first ranked by criterion within the Social Impact Criteria Group.

The system rankings by criterion were based on the "System net effects by criteria" and "advantages/disadvantages by criteria" contained in the individual system summary net effects tables contained in Schedule B. The key "advantages/disadvantages" were listed for each criterion for each system in comparison to the other systems. The rankings for each of the three criteria were then used to identify the overall ranking for the Social Impact Criteria Group. The system net effects were determined based on the application of mitigation/enhancement measures to the potential effect. Where there was uncertainty in magnitude of some of the effects, a distinction could not be made among the systems.

Net effects common to all systems were not carried forward to the evaluation of the system options because they do not assist in distinguishing between systems. Although the systems are named for the dominant element of the system (e.g., Expanded 3Rs Regulations) the evaluation was based on the entire system and all of its components (see Schedule A). The system rankings for the three Social Environment Criteria are discussed below and summarized in Table 4.10. The overall systems rankings can be found in the top row of Table 4.10.

4.3.5.1 Social Impact Criteria

Potential Local Community Impacts

Potential Local Community Impacts can be anticipated as a result of siting new IC&I 3Rs facilities and due to the expansion and increased use of existing facilities. The potential effects of expanded use of existing facilities were taken to be the same for Systems 1 (Existing) and 2 (Existing/Committed). Systems 1 and 2 have all the necessary facilities in place while the other systems may require new facilities which have the potential to affect local communities. As a result, Systems 1 and 2 were ranked equally as the highest.

Systems 3 (Extended 3Rs Regulations) and 4 (Expanded 3Rs Regulations) were ranked as the second highest because, while they both require new dry materials processing facilities, no new compost facilities are required. Therefore, the potential displacement and disruption effects may be greater than Systems 1 and 2, but less than for Systems 5 and 6.

System 5 (Expanded 3Rs Regulations with Organics) was ranked the second lowest because it requires new dry materials processing facilities similar to Systems 3 and 4 and because of the need for more or expanded compost facilities, with the greater potential for odour effects from the "wet" waste. These additional facilities may result in additional nuisance effects on residents and special/sensitive groups due to odour effects, health concerns and increased traffic.

System 6 (No Unprocessed Waste to Landfill) was ranked lowest because of the impacts associated with the new dry materials processing facilities and composting facilities that will be required to process all IC&I waste in the GTA. Although similar to the effects from the facilities in System 5, these effects are expected to be greater than Systems 1-5.

Potential for Broad Social Impact

The systems were evaluated based on their potential positive and negative social impacts on the GTA's broad social environment in terms of the lifestyle of employees and organizations (corporate culture), and the employment and economic development opportunities.

System 2 (Existing/Committed) was ranked the highest because it applies primarily to the major IC&I operations; those which are best able to pay additional costs. It also will likely have the greatest potential to positively affect IC&I attitudes, perceptions and behaviour, because the regulations in this System have been incorporated as a part of normal operations into some institutions, businesses and industry. Over a longer period of time, other operators are likely to comply voluntarily with some of the regulations. However, it has the second least potential to develop direct employment and economic development opportunities.

Systems 3 (Extended 3Rs Regulations), 4 (Expanded 3Rs Regulations) and 5 (Expanded 3Rs Regulations with Organics) were ranked equally as the second highest. While there are differences among the three systems, these differences are not significant enough or the magnitude too uncertain to rank one system ahead of the others. Systems 3 and 4 introduce similar amounts of regulation on the IC&I sector. System 4 also has the second highest potential for developing employment and economic development opportunities, while System 5 has the greatest potential. The regulation placed on the IC&I sector in System 5 places additional requirements on the restaurant and grocery sectors with potential negative financial and operational implications. This System also has the second least potential to positively affect corporate and employee behaviour.

System 1 (Existing) was ranked the third highest because it has the third least potential to positively affect corporate and employee behaviour, and has the least potential to develop direct employment and economic development opportunities.

System 6 (No Unprocessed Waste to Landfill) was ranked the lowest. It introduces the greatest amount of regulation on the IC&I sector and is likely to result in the greatest increase in costs and operational requirements to the largest number of IC&I generators. However, it has the greatest potential for direct employment and economic development opportunities.

Distribution of Social Costs and Benefits

Potential distributional effects were predicted to occur as a result of lifestyle changes on some groups and changes in corporate behaviour in the region and on future generations.

System 2 (Existing/Committed) was ranked the highest because it has the least potential for negative distribution effects from facilities and has the potential for positive effect on future generations due to changes in corporate and employee behaviour. It also has a positive distribution effect because the regulations are broadly based across different sectors but avoid small businesses which are least able to pay for the programs.

Systems 1 (Existing), 3 (Extended 3Rs Regulations) and 4 (Expanded 3Rs Regulations) were ranked equally as the second highest. System 1 has the least potential for negative distribution effects from facilities and the second most positive effect on distribution of regulation, but has the least potential positive effect for future generations as it does not appear that it will alter IC&I behaviour in the long term to the extent that the other systems will. Systems 3 and 4 have the third most potential for negative distribution effects from facilities, but also have the second most positive distribution effect. It is likely that they will have similar potential positive future generational effects.

Systems 5 (Expanded 3Rs Regulations with Organics) and 6 (No Unprocessed Waste to Landfill) were ranked equally as the lowest. System 6 is likely to have the most potential for negative distribution effects from facilities, but System 5 may have the least positive distribution effect from regulations. The potential for positive effect for future generations is uncertain.

Overall System Ranking

By considering the systems ranking by criteria and the criteria rankings (noting that all criteria are ranked equally), an overall system ranking can be completed for the Social Impact Criteria Group. The evaluation considered trade-offs among the rankings for each system and criterion, recognizing that there may be significant potential effects from the 3Rs systems and the potential effects for each criterion may occur throughout the life of the system. The overall rankings are provided at the top of Table 4.10.

System 2 (Existing/Committed) was ranked as the highest System overall. It ranked the highest for all three criteria.

System 1 (Existing), System 3 (Extended 3Rs Regulations), and System 4 (Expanded 3Rs Regulations) were ranked equally as the second highest overall. While Systems 3 and 4 were ranked the second highest for all three criteria, System 1 was ranked the highest for Potential Local Community Impacts, second highest for Distribution of Social Costs and Benefits and the third highest for Potential for Broad Social Impact. Therefore, the Systems were ranked equal.

System 5 (Expanded 3Rs Regulations with Organics) was ranked as the second lowest overall on the basis that it was the second highest for the Potential for Broad Social Impact, second lowest ranked for Potential Local Community Impacts and lowest for Distribution of Social Costs and Benefits.

System 6 (No Unprocessed Waste to Landfill) was ranked the lowest, because it was ranked the lowest for all three criteria.

4.3.5.2 Social Acceptability

The social acceptability of each system was evaluated on the basis of the potential effects of the systems on IC&I sector participation, attitudes and perception of 3Rs activities and willingness to pay for the system. Table 4.11 summarizes the analysis.

Based on the above indicators, Systems 3 (Extended 3Rs Regulations) and 4 (Expanded 3Rs Regulations) were ranked the highest. System 3 has the primary advantage of requiring a much higher level of participation (approximately 70% of all IC&I generators) than Systems 1 and 2, the same as System 4, slightly less than System 5 and moderately less than System 6. The Systems do not require the smallest operators, who are likely to have the greatest difficulty in implementing the regulations, to comply. System 4 has the same components as System 3, but expands the list of dry recyclables. The effects of this System are similar to System 3, but with some potentially increased costs to generators.

The disadvantages of Systems 3 and 4 are that some smaller businesses, industries and institutions will need to comply with the regulations, with the possibility of negative attitudes and perceptions by owners/managers and increased costs for the operators. These negative attitudes and perceptions will be focused primarily on the regulation for mandatory separation. It is assumed that these generators will have the option of either source separating or contracting a collection service that will separate the materials at the dry waste processing facility. Having the option to choose may improve its acceptability. The Systems may also

encourage growth in employee pride and enthusiasm for 3Rs.

System 2 (Existing/Committed) was ranked second highest. It has the second least potential for participation. Small IC&I operators will not be significantly affected by this System and it is expected to be less costly to generators than Systems 3-6, with a resulting greater willingness to pay and more positive attitudes and perceptions on the part of the IC&I sector.

Systems 1 (Existing) and 5 (Expanded 3Rs Regulations with Organics) were ranked equally as the second lowest. System 1 has the least potential for increased participation. Public and private operators appear willing to pay the current costs for waste management. System 5 has a slightly greater potential for participation than Systems 3 and 4 (much greater than System 1), but the effect of the mandatory separation of wet waste is likely to elicit negative attitudes from the restaurant and grocery sector because of potential health, odour and vermin concerns and added costs for clients. System 5 is likely to apply to many small operators/owners in the restaurant and grocery sector, where compliance might be very difficult.

System 6 (No Unprocessed Waste to Landfill) was ranked the lowest because, although it will have the greatest participation, it is likely to be the most costly for individual operators to implement and will affect the entire IC&I sector. It is likely to have particularly negative effects on small and medium sized businesses and institutions, as they may need additional storage space and staff time to source separate. They will also pay proportionally more than larger operators for a hauler to separate the materials. There will likely be negative attitudes towards this System. All generators will be covered by the legislation and there is likely to be greater problems in obtaining compliance.

TABLE 4.10

**GTA IC&I:
SYSTEMS RANKING SUMMARY FOR SOCIAL ENVIRONMENT**

Goal/Criteria Group/Criteria	System 1 Existing	System 2 Existing/Committed	System 3 Extended 3Rs Regulations	System 4 Expanded 3Rs Regulations	System 5 Expanded 3Rs Regulations with Organics	System 6 No Unprocessed Waste to Landfill
IMPACT¹						
	Second highest ranked	Highest ranked	Second highest ranked	Second highest ranked	Second lowest ranked	Lowest ranked
Potential Local Community Impacts	<p>Highest ranked due to:</p> <ul style="list-style-type: none"> new facilities likely are not required effects are likely due to increased use of existing facilities potential for nuisance and health effects on residents, special/sensitive groups, communities and community features and businesses 	<p>Highest ranked due to:</p> <ul style="list-style-type: none"> new facilities likely are not required effects are due to increased use of existing facilities potential for nuisance and health effects on residents, special/sensitive groups, communities and community features and businesses 	<p>Second highest ranked due to:</p> <ul style="list-style-type: none"> new dry materials processing facilities may be required; no new compost facilities required effects are likely due to increased flow of materials and possible new dry materials processing facilities potential for displacement effects potential for increased disruption effects 	<p>Second highest ranked due to:</p> <ul style="list-style-type: none"> new dry materials processing facilities may be required; no new compost facilities required effects are likely due to increased flow of materials and possible new dry materials processing facilities potential for displacement effects potential for increased disruption effects 	<p>Second lowest ranked due to:</p> <ul style="list-style-type: none"> new dry materials processing facilities likely will be required new or expanded compost facilities will be required potential for significant odour effects from composting facilities potential for nuisance effects, primarily associated with compost facilities potential for displacement effects from new facilities 	<p>Lowest ranked due to:</p> <ul style="list-style-type: none"> new dry materials processing facilities and composting facilities required potential for significant odour effects greatest potential for nuisance effects from existing and new facilities greatest potential for displacement effects from new facilities

1. Table does not present potential impacts in comparative terms (among systems). See text for comparative evaluation to support the system rankings.

Goal/Criteria Group/Criteria	System 1 Existing	System 2 Existing/Committed	System 3 Extended 3Rs Regulations	System 4 Expanded 3Rs Regulations	System 5 Expanded 3Rs Regulations with Organics	System 6 No Unprocessed Waste to Landfill
Potential for Broad Social Impact	<p>Third highest ranked due to:</p> <ul style="list-style-type: none"> limited amount of regulation and low cost to the IC&I sector potential to develop direct employment and economic opportunities in the waste management sector potential to positively affect IC&I attitudes, behaviour and operations minor negative operational effects on the IC&I sector 	<p>Highest ranked due to:</p> <ul style="list-style-type: none"> limited regulation on the IC&I sector with increased cost over System 1 for major IC&I potential to develop direct employment and economic opportunities in the waste management sector potential to positively affect IC&I attitudes, behaviour and operations minor negative operational effects; restricted mainly to major IC&I who can accommodate the requirements 	<p>Second highest ranked due to:</p> <ul style="list-style-type: none"> broad regulation of the IC&I sector with increased costs potential to develop direct employment and economic opportunities in the waste management sector potential to positively affect IC&I attitudes, behaviour, and operations 	<p>Second highest ranked due to:</p> <ul style="list-style-type: none"> broad regulation of the IC&I sector with increased costs potential to develop direct employment and economic opportunities in the waste management sector potential to positively affect IC&I attitudes, behaviour, and operations 	<p>Second highest ranked due to:</p> <ul style="list-style-type: none"> broad regulation of the IC&I sector with increased costs. Will affect some types of businesses and institutions (grocery, hospitals, etc.) more. potential to develop direct employment and economic opportunities in the waste management sector, primarily in composting potential to positively affect IC&I attitudes, behaviour and operations 	<p>Lowest ranked due to:</p> <ul style="list-style-type: none"> Regulation of the entire IC&I sector with potential cost increases potential to develop direct employment and economic opportunities in the waste management sector as full and specialized service will be required potential to positively affect IC&I attitudes, behaviour and operations potential for negative affect on operation of many IC&I from source separation of wet waste

Goal/Criteria Group/Criteria	System 1 Existing	System 2 Existing/Committed	System 3 Extended 3Rs Regulations	System 4 Expanded 3Rs Regulations	System 5 Expanded 3Rs Regulations with Organics	System 6 No Unprocessed Waste to Landfill
Distribution of Social Costs and Benefits	<p>Second highest ranked due to:</p> <ul style="list-style-type: none"> potential for negative distribution effects from facilities potential positive effect for future generations positive effect on distribution of regulation. 	<p>Highest ranked due to:</p> <ul style="list-style-type: none"> potential for negative distribution effects from facilities potential positive effect for future generations (magnitude uncertain) positive distribution regulation effect. Avoids smallest businesses, but is broadly based 	<p>Second highest ranked due to:</p> <ul style="list-style-type: none"> potential for negative distribution effects from facilities with less facilities required and less potential community effects potential positive effect for future generations (magnitude uncertain) positive distribution regulation effect. May avoid smallest businesses, is broadly based, but may include small to medium sized businesses 	<p>Second highest ranked due to:</p> <ul style="list-style-type: none"> potential for negative distribution effects from facilities with less facilities required and less potential community effects potential positive effect for future generations (magnitude uncertain) positive distribution regulation effect. May avoid smallest businesses, is broadly based, but may include small to medium sized businesses 	<p>Lowest ranked due to:</p> <ul style="list-style-type: none"> potential for negative distribution effects from facilities, in particular compost facilities potential positive effect for future generations (magnitude uncertain) positive distribution regulation effect. Additional requirement for some IC&I. 	<p>Lowest ranked due to:</p> <ul style="list-style-type: none"> potential for negative distribution effects from facilities, in particular compost facilities potential for high positive effect for future generations (magnitude uncertain) positive distribution regulation effect. Affects everyone, but appear to be few provisions for small businesses

TABLE 4.11

GTA IC&I:
SYSTEMS RANKING SUMMARY FOR SOCIAL ACCEPTABILITY

Goal/Criteria Group/Criteria	System 1 Existing	System 2 Existing/Committed	System 3 Extended 3Rs Regulations	System 4 Expanded 3Rs Regulations	System 5 Expanded 3Rs Regulations with Organics	System 6 No Unprocessed Waste to Landfill
Service ¹						
Social Acceptability	<p>Second lowest ranked due to:</p> <ul style="list-style-type: none"> low potential for participation operators appear willing to pay for voluntary measures potential for voluntary compliance by those not regulated 	<p>Second highest ranked due to:</p> <ul style="list-style-type: none"> low potential for participation small IC&I generators not significantly affected by regulations potential increase in employee and corporate pride 	<p>Highest ranked due to:</p> <ul style="list-style-type: none"> potential for greater participation many small operators will be required to comply; smallest operators not required to participate potential for negative attitudinal effect by some IC&I generators because of increased regulation; potential for increase in employee pride 	<p>Highest ranked due to:</p> <ul style="list-style-type: none"> potential for greater participation many small operators will be required to comply; smallest operators not required to participate 	<p>Second lowest ranked due to:</p> <ul style="list-style-type: none"> potential for greater participation potential negative attitudes from grocery and restaurant sector all but smallest operators required to participate 	<p>Lowest ranked due to:</p> <ul style="list-style-type: none"> potential for maximum participation as the entire IC&I sector is required to participate costly to implement with significant cost of compliance for small to medium size public and independent private operators

1. Table does not present potential impacts in comparative terms (among systems). See text for comparative evaluation to support the system rankings.

Goal/Criteria Group/Criteria	System 1 Existing	System 2 Existing/Committed	System 3 Extended 3Rs Regulations	System 4 Expanded 3Rs Regulations	System 5 Expanded 3Rs Regulations with Organics	System 6 No Unprocessed Waste to Landfill
Social Acceptability		<ul style="list-style-type: none"> potential for IC&I willingness to pay; some major IC&I generators currently implement regulations generally limited negative attitudes to System. 	<ul style="list-style-type: none"> increase in cost of compliance 	<ul style="list-style-type: none"> potential for negative attitudinal effect by some IC&I generators because of increased regulation; potential for increase in employee pride increase in cost of compliance 	<ul style="list-style-type: none"> cost of compliance higher for small IC&I generators with more effects on grocery and restaurant sector; health and customer issues with restaurants due to storage and sorting food waste potential for non-compliance 	<ul style="list-style-type: none"> potential for non-compliance potential for negative attitudes and perceptions.

5.0 SUMMARY OF FINDINGS

5.1 Residential: Social Environment

The results of the social impact assessment and evaluation of the residential 3Rs Systems for all four Regions are summarized below in Table 5.1.

TABLE 5.1
SUMMARY OF RESIDENTIAL 3RS SYSTEMS RANKINGS BY REGION:
SOCIAL ENVIRONMENT

Region	System 1 Existing	System 2 Existing/ Committed	System 3 Direct Cost	System 4 Expanded Blue Box	System 5 Wet/Dry	System 6 Mixed Waste Processing
Durham	Lowest ranked	Second lowest ranked	Second highest ranked	Highest ranked	Third highest ranked	Lowest ranked
Metro Toronto	Third lowest ranked	Second highest ranked	Third highest ranked	Highest ranked	Second lowest ranked	Lowest ranked
York	Lowest ranked	Second lowest ranked	Second highest ranked	Highest ranked	Third highest ranked	Lowest ranked
Peel	Second lowest ranked	Second highest ranked	Second highest ranked	Highest ranked	Second lowest ranked	Lowest ranked

System 4 (Expanded Blue Box) ranks as the highest system in all four Regions. This System does not require the construction and operation of major new facilities in addition to those found in Systems 1-3 (in Peel it would involve only the addition of community recycling centres in Systems 2-4). Therefore, it has only low to moderate potential for significant local community impacts from facilities.

The potential for System 4 to generate negative Broad Social Impacts in the GTA is generally considered less than for the other systems. It provides the potential for residents to continue to change their lifestyle in a way that is familiar to them while encouraging separation of a greater number of materials. Separation is likely to occur more frequently and with less errors than other systems. System 4 is suitable to low density residential development and can be applied to multi-family dwellings more easily than some other systems.

System 4 generally provides fairer Distribution of Social Costs and Benefits. It provides 3Rs services to more people than System 1 (Existing), System 2 (Existing/Committed) and System 3 (Direct Cost), and maintains the promotion of changes in 3Rs lifestyle/behaviour that should

have a positive future generational effect.

System 3 (Direct Cost) ranks second highest in Durham, Peel and York Regions, and third highest, behind System 2 (Existing/Committed), in Metro Toronto. Overall, the two key factors that cause System 3 to rank lower than System 4 are: (1) the potential for illegal dumping and burning; and, (2) the potential of providing fewer households with opportunities to participate. It is ranked lower in Metro than in the other Regions because of its lack of applicability to multi-family households; a higher proportion of all of the households in Metro. System 3 has similar local community impacts to System 2 (Existing/Committed) and System 4 (Expanded Blue Box) as all require the same number of facilities.

System 5 (Wet/Dry) ranks second lowest, lower than System 2 (Existing/Committed) in Peel and Metro, largely because of the potential problems associated with applying this System in higher density areas (i.e., the potential for a variety of lifestyle inconveniences and negative operational effects in high density housing areas). Overall, System 5 ranks lower than all other systems except System 6 (Mixed Waste Processing) in Potential Local Community Impacts, because of the additional facilities required and the greater potential for displacement and effects from odour associated with the "wet" stream.

System 2 (Existing/Committed) ranks higher than System 1 (Existing) and System 6 (Mixed Waste Processing) in all of the Regions and lower than System 5 (Wet/Dry) in Durham and York Regions. System 2 has similar potential local community effects from facilities to System 3 (Direct Cost) and System 4 (Expanded Blue Box), and less negative broad social impacts than System 5 (Wet/Dry) or System 6 (Mixed Waste Processing). It also has few lifestyle inconveniences and people are familiar with the System.

System 1 (Existing) is ranked equally (lowest ranking) with System 6 (Mixed Waste Processing) in Durham and York Regions, and is ranked somewhat higher in Peel and Metro Toronto. This System has the least potential for negative local community impacts because it does not involve the potential negative social effects associated with new facilities or the expanded use of existing facilities. However, while System 1 has few associated inconveniences, it minimizes the distribution of opportunities to participate in 3Rs activities and has a lower potential positive future generational effect. It also has the least positive effect on direct employment and economic development, although this is considered a minor effect.

System 6 (Mixed Waste Processing) ranks as the lowest residential system in all Regions. This is because it has the greatest potential for significant local community impact (due to the social effects associated with mixed waste processing and composting facilities). It also creates the potential for lifestyle changes which do not support 3Rs individual behaviour (i.e., the System provides the opportunity for individuals to set out their garbage for pick-up

without separating out the reusables and recyclables). It also has negative distributional effects in situations where some residents in each Region are likely to sustain negative effects from the facility operation. However, the majority of regional residents are unaffected by the facility operation. While System 6 has the greatest potential for direct employment and economic development, this is considered a minor effect. As well, the benefits to future generations are uncertain. Despite the great potential for increased waste diversion, the System provides greater opportunities for non-participation in 3Rs activities.

5.2 IC&I: Social Environment

The results of the social environment assessment and evaluation of the IC&I systems for the Greater Toronto Area are summarized below in Table 5.2.

TABLE 5.2
IC&I 3RS SYSTEM RANKINGS:
SOCIAL ENVIRONMENT

System 1 Existing	System 2 Existing/Committed	System 3 Extended 3Rs Regulations	System 4 Expanded 3Rs Regulations	System 5 Expanded 3Rs Regulations with Organics	System 6 No unprocessed Waste to Landfill
Second highest ranked	Highest ranked	Second highest ranked	Second highest ranked	Second lowest ranked	Lowest ranked

System 2 (Existing/Committed) was ranked as the highest system overall for Social Environment as it ranked the highest for all three criteria. System 2 has all the necessary facilities in place and therefore has the least potential to affect local communities. It was ranked the highest under Potential for Broad Social Impact because it applies primarily to the major IC&I operations; those which are best able to pay for the additional costs. It also will likely have the greatest potential to positively affect IC&I attitudes, perceptions and behaviour, because the regulations in this system have already been incorporated as a part of normal operations into some institutions, businesses and industry. System 2 was also ranked the highest for Distribution of Social Costs and Benefits because it has the least potential for negative distribution effects from facilities and has the potential for positive effect on future generations due to changes in corporate and employee behaviour.

Systems 1 (Existing), 3 (Direct Cost) and 4 (Expanded Blue Box) were ranked second highest under Social Environment. While Systems 3 and 4 were ranked the second highest for all three criteria, System 1 was ranked the highest for Potential Local Community Impacts,

second highest for Distribution of Social Costs and Benefits and the third highest for Potential for Broad Social Impact.

Under Potential for Broad Social Impact, System 1 was ranked the third highest because it has the least potential to develop direct employment and economic development opportunities, and has the third least potential to positively affect IC&I attitudes, perceptions and behaviours. System 1 was ranked second highest under Distribution of Social Costs and Benefits as it has the least potential to unfairly burden communities or businesses with a 3Rs facility and the second most positive effect on applying new regulations fairly across all sectors. It has the worst effect for future generations as it is not likely to result in IC&I operators supporting 3Rs activities in the long term to the extent that the other systems will.

System 3 (Extended 3Rs Regulations) was also ranked second highest. System 3 requires new facilities to process dry materials but no new compost facilities. Therefore, the potential displacement and disruption effects may be greater than Systems 1 and 2, but less than for Systems 5 and 6. System 3 ranked second highest under Distribution of Social Costs and Benefits because, while it has the third most potential for affecting a community or business with a facility, it also has the second most positive distribution effect (i.e., second highest potential of all sectors experiencing the same regulation).

System 4 (Expanded List of Dry Recyclables for Mandatory Separation) joined Systems 1 and 3 as second highest ranked under Social Environment. This System also does not require any new composting facilities. Under Broad Social Impact, System 4 has the second highest potential for creating direct employment and economic opportunities. System 4 joins System 3 in having the second most positive distribution effect.

System 5 (Expanded 3Rs Regulations with Organics) was ranked as the second lowest overall on the basis that it was the second highest for the Potential for Broad Social Impact, second lowest for the Potential Local Community Impacts and lowest for the Distribution of Social Costs and Benefits.

System 6 (No Unprocessed Waste to Landfill) was ranked the lowest overall because it ranked lowest for all of the criteria. It introduces the greatest amount of regulation on the IC&I sector and is likely to result in the greatest increase in costs and operational requirements to the largest number of IC&I generators.

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SCHEDULE A

Residential and IC&I 3Rs System Components

**TABLE A.1:
REGION OF DURHAM
RESIDENTIAL SYSTEM COMPONENTS**

System 1: Existing	System 2: Existing/Committed	System 3: Direct Cost	System 4: Expanded Blue Box	System 5: Wet/Dry	System 6: Mixed Waste Processing
Garbage Collection and Disposal <ul style="list-style-type: none"> • Curbside collection of residential garbage from single family dwellings by municipal forces or contractors to municipalities • Collection of residential garbage from multi-family units by municipal forces or private contractors. • Self haul of waste to landfills and transfer stations by residents • Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads 	Garbage Collection and Disposal <ul style="list-style-type: none"> • Curbside collection of residential garbage from single family dwellings by municipal forces or contractors to municipalities • Collection of residential garbage from multi-family units by municipal forces or private contractors. • Self haul of waste to landfills and transfer stations by residents • Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads 	Garbage Collection and Disposal <ul style="list-style-type: none"> • Curbside collection of residential garbage from single family dwellings by municipal forces or contractors to municipalities • <i>Direct cost system for garbage collection</i> • Collection of residential garbage from multi-family units by municipal forces or private contractors. • Self haul of waste to landfills and transfer stations by residents • Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads 	Garbage Collection and Disposal <ul style="list-style-type: none"> • Curbside collection of residential garbage from single family dwellings by municipal forces or contractors to municipalities • Collection of residential garbage from multi-family units by municipal forces or private contractors. • Self haul of waste to landfills and transfer stations by residents • Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads 	Garbage Collection <ul style="list-style-type: none"> • <i>Curbside collection of residential waste from single family dwellings in three streams by specially designed trucks by municipal forces or contractors to municipalities</i> • <i>Collection of residential garbage from multi-family units in three streams by municipal forces or private contractors where feasible</i> • Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads • Self haul of waste to landfills and transfer stations by residents 	Garbage Collection and Disposal <ul style="list-style-type: none"> • Curbside collection of residential garbage from single family dwellings by municipal forces or contractors to municipalities • Collection of residential garbage from multi-family units by municipal forces or private contractors. • Self haul of waste to landfills and transfer stations by residents • Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads

TABLE A.1
REGION OF DURHAM
RESIDENTIAL SYSTEM COMPONENTS
(continued)

Residential Recycling and Collection	Residential Recycling and Collection	Residential Recycling and Collection	Residential Recycling and Collection	Residential Recycling and Collection	Residential Recycling and Collection
<ul style="list-style-type: none"> • Curbside collection of Blue Box materials from single family dwellings. Materials include ONP, OMG, telephone directories, OCC, PET, HDPE, glass, ferrous, aluminum. • Collection of bins of recyclables from multi-family units 	<ul style="list-style-type: none"> • <i>Expansion of curbside collection of Blue Box materials from single family dwellings in some municipalities to include all materials designated basic Blue Box waste and at least two materials designated as supplementary Blue Box waste in the 3Rs Regulations</i> • <i>Curbside collection of additional dry materials</i> • <i>Recycling services at all multi-family buildings with 6 or more units (3Rs Regulations)</i> • <i>Collection of bins of recyclables from multi-family units</i> 	<ul style="list-style-type: none"> • Expansion of curbside collection of Blue Box materials from single family dwellings in some municipalities to include all materials designated basic Blue Box waste and at least two materials designated as supplementary Blue Box waste in the 3Rs Regulations • <i>Curbside collection of increased quantities of dry materials following implementation of Direct Cost system for garbage collection</i> • Recycling services at all multi-family buildings with 6 or more units. • Collection of bins of recyclables from multi-family units 	<ul style="list-style-type: none"> • <i>Curbside collection of Expanded Blue Box materials including plastics, (PET, rigid plastic, bottles & tubes, film plastic, foam plastic and rigid trays); paper fibre (ONP, OCC, boxboard, polycoat, phone books, magazines and catalogues and mixed household paper); metal (steel and aluminum cans, aluminum trays and foil), clear and coloured glass and textiles</i> • <i>Recycling services for full range of Expanded Blue Box materials at all multi-family buildings with 6 or more units</i> • <i>Collection of bins of recyclables (collecting all Expanded Blue Box materials) from multi-family units</i> • <i>Collection of bins of recyclables (collecting all Expanded Blue Box materials) from multi-family units</i> 	<ul style="list-style-type: none"> • <i>Provide carts to all single family households</i> • <i>Separation of waste into three streams (wet, dry, and garbage) by the householder</i> • <i>Expanded set of dry materials to be collected, including plastics, (PET, rigid plastic, bottles & tubes, film plastic, foam plastic and rigid trays); paper fibre (ONP, OCC, boxboard, polycoat, phone books, magazines and catalogues and mixed household paper); metal (steel and aluminum cans, aluminum trays and foil), clear and coloured glass and textiles</i> • <i>Recycling services at all multi-family buildings with 6 or more units</i> • <i>Large bins provided in the garbage management area of multi-family buildings. Residents will be encouraged to separate their waste into three separate bags</i> 	<ul style="list-style-type: none"> • Expansion of curbside collection of Blue Box materials from single family dwellings in some municipalities to include all materials designated basic Blue Box waste and at least two materials designated as supplementary Blue Box waste in the 3Rs Regulations • Curbside collection of additional dry materials • Recycling services at all multi-family buildings with 6 or more units • Collection of bins of recyclables from multi-family units

TABLE A.1
REGION OF DURHAM
RESIDENTIAL SYSTEM COMPONENTS
(continued)

Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> • Drop-off depots for multi-family residents not serviced by recycling • Drop-off depot for rural households. • Drop-off depots for recyclables (scrap metal, batteries, brush, drywall, HHW, tires, OCC and textiles) • Depots located at transfer stations to provide recycling opportunities to self-haul generators. 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> • Drop-off depots for multi-family residents not serviced by recycling • Drop-off depot for rural households • Drop-off depots for recyclables (scrap metal, batteries, brush, drywall, HHW, tires, OCC and textiles) • Depots located at transfer stations to provide recycling opportunities to self-haul generators. 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> • Drop-off depots for multi-family residents not serviced by recycling • Drop-off depot for rural households • Drop-off depots for recyclables (scrap metal, batteries, brush, drywall, HHW, tires, OCC and textiles) • Depots located at transfer stations to provide recycling opportunities to self-haul generators. 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> • <i>Drop-off depots for multi-family residents not serviced by recycling (collecting all Expanded Blue Box materials)</i> • <i>Drop-off depot for rural households (collecting all Expanded Blue Box materials)</i> • Drop-off depots for recyclables (scrap metal, batteries, brush, drywall, HHW, tires, OCC and textiles) • Depots located at transfer stations to provide recycling opportunities to self-haul generators. 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> • Drop-off depots for multi-family residents not serviced by recycling • Drop-off depot for rural households • Drop-off depots for recyclables (scrap metal, batteries, brush, drywall, HHW, tires, OCC and textiles) • Depots located at transfer stations to provide recycling opportunities to self-haul generators 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> • Drop-off depots for multi-family residents not serviced by recycling • Drop-off depot for rural households • Drop-off depots for recyclables (scrap metal, batteries, brush, drywall, HHW, tires, OCC and textiles) • Depots located at transfer stations to provide recycling opportunities to self-haul generators.
Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> • Seasonal curbside collection of leaf and yard waste. • Drop-off depots for leaf and yard waste 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> • Seasonal curbside collection of leaf and yard waste • Drop-off depots for leaf and yard waste 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> • Seasonal curbside collection of leaf and yard waste. • Drop-off depots for leaf and yard waste 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> • Seasonal curbside collection of leaf and yard waste • Drop-off depots for leaf and yard waste 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> • <i>Collection of leaf and yard waste as part of three stream pick-up</i> • <i>Separate brush collection</i> • Drop-off depots for leaf and yard waste 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> • Seasonal curbside collection of leaf and yard waste • Drop-off depots for leaf and yard waste

TABLE A.1
REGION OF DURHAM
RESIDENTIAL SYSTEM COMPONENTS
(continued)

Residential Household Composting <ul style="list-style-type: none"> • Backyard composter distribution programs (22,450 composters by end of 1992) • Limited community composting • Limited vermicomposting • 4,000 planned (cap budget) 	Residential Household Composting <ul style="list-style-type: none"> • Backyard composter distribution programs (26,450 composters by end of 1992) • Limited community composting • Limited vermicomposting 	Residential Household Composting <ul style="list-style-type: none"> • Door to door distribution of backyard composters to 80% of single family households • Large 3-bin composting units distributed to apartment and co-operative housing complexes <ul style="list-style-type: none"> • Promotion of vermicomposting to multi-family units • Promotion of community composting 	Residential Household Composting <ul style="list-style-type: none"> • Door to door distribution of backyard composters to 80% of single family households. • Large 3-bin composting units distributed to apartment and co-operative housing complexes <ul style="list-style-type: none"> • Promotion of vermicomposting to multi-family units • Promotion of community composting 	Residential Household Composting <ul style="list-style-type: none"> • Door to door distribution of backyard composters to 80% of single family households. • Large 3-bin composting units distributed to apartment and co-operative housing complexes <ul style="list-style-type: none"> • Promotion of vermicomposting to multi-family units • Promotion of community composting 	Residential Household Composting <ul style="list-style-type: none"> • Door to door distribution of backyard composters to 80% of single family households. • Large 3-bin composting units distributed to apartment and co-operative housing complexes <ul style="list-style-type: none"> • Promotion of vermicomposting to multi-family units • Promotion of community composting
Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.). <ul style="list-style-type: none"> • Special curbside collections of Christmas trees • Permanent drop-off depots for household hazardous waste (HHW) at Brock West Landfill, and Scugog and Oshawa transfer stations • Toxic Taxi service (discontinued in Fall 1992) 	Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.). <ul style="list-style-type: none"> • Special curbside collections of Christmas trees • Permanent drop-off depots for household hazardous waste (HHW) at Brock West Landfill, and Scugog and Oshawa transfer stations 	Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.). <ul style="list-style-type: none"> • Special curbside collections of Christmas trees • Permanent drop-off depots for household hazardous waste (HHW) at Brock West Landfill, and Scugog and Oshawa transfer stations 	Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.). <ul style="list-style-type: none"> • Special curbside collections of Christmas trees • Permanent drop-off depots for household hazardous waste (HHW) at Brock West Landfill, and Scugog and Oshawa transfer stations 	Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods , etc.) <ul style="list-style-type: none"> • Special curbside collections of Christmas trees • Permanent drop-off depots for household hazardous waste (HHW) at Brock West Landfill, and Scugog and Oshawa transfer stations 	Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.). <ul style="list-style-type: none"> • Special curbside collection of Christmas trees • Permanent drop-off depots for household hazardous waste (HHW) at Brock West Landfill, and Scugog and Oshawa transfer stations

TABLE A.1
REGION OF DURHAM
RESIDENTIAL SYSTEM COMPONENTS
(continued)

Composting Facilities <ul style="list-style-type: none"> Centralized windrow composting of leaf and yard waste. 	Composting Facilities <ul style="list-style-type: none"> Centralized windrow composting of leaf and yard waste 	Composting Facilities <ul style="list-style-type: none"> Centralized windrow composting of leaf and yard waste 	Composting Facilities <ul style="list-style-type: none"> Centralized windrow composting of leaf and yard waste 	Composting Facilities <ul style="list-style-type: none"> Existing centralized windrow leaf and yard waste composting facilities may be closed Central composting facility (in vessel) for composting of source separated household organics (wet stream) and leaf and yard waste 	Composting Facilities <ul style="list-style-type: none"> Centralized windrow composting of leaf and yard waste New mixed waste processing and composting facility
Reuse Centres and Activities <ul style="list-style-type: none"> Goodwill trailers throughout region Attended donation centre at Riston transfer station 	Reuse Centres and Activities <ul style="list-style-type: none"> Goodwill trailers throughout region Attended donation centre at Riston transfer station 	Reuse Centres and Activities <ul style="list-style-type: none"> Goodwill trailers throughout region Attended donation centre at Riston transfer station 	Reuse Centres and Activities <ul style="list-style-type: none"> Goodwill trailers throughout region Attended donation centre at Riston transfer station 	Reuse Centres and Activities <ul style="list-style-type: none"> Goodwill trailers throughout region Attended donation centre at Riston transfer station 	Reuse Centres and Activities <ul style="list-style-type: none"> Goodwill trailers throughout region Attended donation centre at Riston transfer station
MRFs <ul style="list-style-type: none"> One processing centre (MRF) for dry recyclables collected from the residential (and minor amounts from the commercial/institutional) sector. Owned by the municipality and operated by municipal staff. Construct new MRF to handle 20-year requirements Close existing MRF when new MRF constructed 	MRFs <ul style="list-style-type: none"> One processing centre (MRF) for dry recyclables collected from the residential (and minor amounts from the commercial/institutional) sector. Owned by the municipality and operated by municipal staff Improvements/expansion to the existing regional MRF Construct new MRF to handle 20-year requirements Close existing MRF when new MRF constructed 	MRFs <ul style="list-style-type: none"> One processing centre (MRF) for dry recyclables collected from the residential (and minor amounts from the commercial/institutional) sector. Owned by the municipality and operated by municipal staff Construct new MRF, to process larger stream of dry recyclables Close existing MRF when new MRF constructed 	MRFs <ul style="list-style-type: none"> One processing centre (MRF) for dry recyclables collected from the residential (and minor amounts from the commercial/institutional) sector. Owned by the municipality and operated by municipal staff Construct new MRF, to process larger stream of dry recyclables Close existing MRF when new MRF constructed 	MRFs <ul style="list-style-type: none"> Processing centre (MRF) for dry recyclables collected from the residential (and minor amounts from the commercial/institutional) sector. Owned by the municipality and operated by municipal or contractors' staff. Construct new MRF, to process larger dry stream of recyclables Close existing MRF when new MRF constructed 	MRFs <ul style="list-style-type: none"> One processing centre (MRF) for dry recyclables collected from the residential (and minor amounts from the commercial/institutional) sector. Owned by the municipality and operated by municipal staff Construct new MRF to process larger stream of dry recyclables Close existing MRF when new MRF constructed

TABLE A.1
REGION OF DURHAM
RESIDENTIAL SYSTEM COMPONENTS
(continued)

Residential Promotion and Education <ul style="list-style-type: none"> • 3Rs promotion and education program, focused on the residential sector, including home composting video • Consumer education program to reduce waste generation, includes videos, posters, calendars, pamphlets, advertisements etc. 	Residential Promotion and Education <ul style="list-style-type: none"> • 3Rs promotion and education program, focused on the residential sector, including home composting video • Consumer education program to reduce waste generation, includes videos, posters, calendars, pamphlets, advertisements etc. 	Residential Promotion and Education <ul style="list-style-type: none"> • 3Rs promotion and education program, focused on the residential sector, including home composting video • Consumer education program to reduce waste generation, includes videos, posters, calendars, pamphlets, advertisements etc. • <i>3Rs promotion and education program, focused on source reduction, pre-cycling, reuse and recycling</i> • <i>Promotion/education program on direct cost system</i> 	Residential Promotion and Education <ul style="list-style-type: none"> • 3Rs promotion and education program, focused on the residential sector, including home composting video • Consumer education program to reduce waste generation, includes videos, posters, calendars, pamphlets, advertisements etc. • <i>3Rs promotion and education program, focused on source reduction, pre-cycling, reuse and recycling</i> • <i>Promotion/education program on Expanded Blue Box program</i> 	Residential Promotion and Education <ul style="list-style-type: none"> • 3Rs promotion and education program, focused on the residential sector, including home composting video • Consumer education program to reduce waste generation, includes videos, posters, calendars, pamphlets, advertisements etc. • <i>3Rs promotion and education program, focused on source reduction, pre-cycling, reuse and recycling</i> • <i>Promotion/education program for wet/dry system</i> 	Residential Promotion and Education <ul style="list-style-type: none"> • 3Rs promotion and education program, focused on the residential sector, including home composting video • Consumer education program to reduce waste generation, includes videos, posters, calendars, pamphlets, advertisements etc. • <i>3Rs promotion and education program, focused on source reduction, pre-cycling, reuse and recycling</i>
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**TABLE A.2:
METRO TORONTO
RESIDENTIAL SYSTEM COMPONENTS**

System 1: Existing	System 2: Existing/Committed	System 3: Direct Cost	System 4: Expanded Blue Box	System 5: Wet/Dry	System 6: Mixed Waste Processing
Garbage Collection and Disposal <ul style="list-style-type: none"> • Curbside collection of residential garbage from single family dwellings • Collection of residential garbage from multi-family units by municipal forces or private contractors • Self-haul of waste to landfills and transfer stations by residents • Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads 	Garbage Collection and Disposal <ul style="list-style-type: none"> • Curbside collection of residential garbage from single family dwellings • Collection of residential garbage from multi-family units by municipal forces or private contractors. • Self-haul of waste to landfills and transfer stations by residents • Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads 	Garbage Collection and Disposal <ul style="list-style-type: none"> • Curbside collection of residential garbage from single family dwellings • Collection of residential garbage from multi-family units by municipal forces or private contractors. • <i>Direct cost system for garbage collection from households currently serviced by municipal forces.</i> • Self-haul of waste to landfills and transfer stations by residents • Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads 	Garbage Collection and Disposal <ul style="list-style-type: none"> • Curbside collection of residential garbage from single family dwellings • Collection of residential garbage from multi-family units by municipal forces or private contractors. • Self-haul of waste to landfills and transfer stations by residents • Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads 	Garbage Collection and Disposal <ul style="list-style-type: none"> • <i>Curbside collection of residential waste from single family dwellings in three streams by specially designed trucks</i> • <i>Collection of residential garbage from multi-family units in three streams by municipal forces or private contractors, where feasible</i> • Self-haul of waste to landfills and transfer stations by residents • Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads 	Garbage Collection and Disposal <ul style="list-style-type: none"> • Curbside collection of residential garbage from single family dwellings • Collection of residential garbage from multi-family units by municipal forces or private contractors. • Self-haul of waste to landfills and transfer stations by residents • Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads

TABLE A.2
METRO TORONTO:
RESIDENTIAL SYSTEM COMPONENTS
(continued)

Residential Recycling and Collection	Residential Recycling and Collection	Residential Recycling and Collection	Residential Recycling and Collection	Residential Recycling and Collection	Residential Recycling and Collection
<ul style="list-style-type: none"> • Curbside collection of Blue Box materials from single family dwellings and some apartment buildings. Typical materials include ONP, OCC, telephone directories, magazines, PET, HDPE, glass, ferrous, aluminum • Collection of bins of recyclables from multi-family units 	<ul style="list-style-type: none"> • <i>Expansion of curbside collection of Blue Box materials from single family dwellings in some municipalities to include all materials designated basic Blue Box waste and at least two materials designated as supplementary Blue Box waste in the 3Rs Regulations</i> • <i>Curbside collection of additional dry materials</i> • <i>Recycling services at all multi-family buildings with 6 or more units (3R's Regulations)</i> • <i>Collection of bins of recyclables from multi-family units</i> • <i>Some additional recycling service to multi-family units</i> 	<ul style="list-style-type: none"> • Expansion of curbside collection of Blue Box materials from single family dwellings in some municipalities to include all materials designated basic Blue Box waste and at least two materials designated as supplementary Blue Box waste in the 3Rs Regulations • Curbside collection of additional dry materials • Recycling services at all multi-family buildings with 6 or more units • Collection of bins of recyclables from multi-family units 	<ul style="list-style-type: none"> • <i>Curbside collection of Expanded Blue Box materials including plastics, (PET, rigid plastic, bottles & tubes, film plastic, foam plastic and rigid trays); paper fibre (ONP, OCC, boxboard, polycoat, phone books, magazines and catalogues and mixed household paper); metal (steel and aluminum cans, aluminum trays and foil), clear and coloured glass and textiles</i> • <i>Recycling services for full range of Expanded Blue Box materials at all multi-family buildings with 6 or more units</i> • <i>Collection of bins of recyclables (collecting all Expanded Blue Box materials) from multi-family units</i> • <i>Collection of bins of recyclables (collecting all expanded blue box materials) from multi-family units.</i> 	<ul style="list-style-type: none"> • <i>Provide carts to all single family households.</i> • <i>Separation of waste into three streams (wet, dry and garbage) by the householder.</i> • <i>Expanded set of dry materials to be collected, including plastics, (PET, rigid plastic, bottles & tubes, film plastic, foam plastic and rigid trays); paper fibre (ONP, OCC, boxboard, polycoat, phone books, magazines and catalogues and mixed household paper); metal (steel and aluminum cans, aluminum trays and foil), clear and coloured glass and textiles</i> • <i>Recycling services at all multi-family buildings with 6 or more units</i> • <i>Large bins provided in the garbage management area of multi-family buildings, where space permits. Residents will be encouraged to separate their waste into three separate bags</i> 	<ul style="list-style-type: none"> • Expansion of curbside collection of Blue Box materials from single family dwellings in some municipalities to include all materials designated basic Blue Box waste and at least two materials designated as supplementary Blue Box waste in the 3Rs Regulations • Curbside collection of additional dry materials • Recycling services at all multi-family buildings with 6 or more units • Collection of bins of recyclables from multi-family units • Some additional recycling service to multi-family units

TABLE A.2
METRO TORONTO:
RESIDENTIAL SYSTEM COMPONENTS
(continued)

Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> • Drop-off depot for dry recyclables (including all banned materials) at landfills • Depots located at transfer stations to provide recycling opportunities to self-haul generators • Igloos and domes provide opportunities to recycle in public areas • Drop-off depots for multi-family residents not serviced by recycling • Depots for voluntary recycling by residents (e.g.Scarsborough) 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> • Drop-off depot for dry recyclables (including all banned materials) at landfills • Depots located at transfer stations to provide recycling opportunities to self-haul generators • Igloos and domes provide opportunities to recycle in public areas • Drop-off depots for multi-family residents not serviced by recycling • Depots for voluntary recycling by residents (e.g.Scarsborough) 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> • Drop-off depot for dry recyclables (including all banned materials) at landfills • Depots located at transfer stations to provide recycling opportunities to self-haul generators • Igloos and domes provide opportunities to recycle in public areas • Drop-off depots for multi-family residents not serviced by recycling • Depots for voluntary recycling by residents (e.g.Scarsborough) 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> • Drop-off depot for dry recyclables (including all banned materials) at landfills • Depots located at transfer stations to provide recycling opportunities to self-haul generators (<i>collecting all Expanded Blue Box materials</i>) • Igloos and domes provide opportunities to recycle in public areas • Drop-off depots for multi-family residents not serviced by recycling, for full range of <i>Expanded Blue Box materials</i>. • Depots for voluntary recycling by residents (e.g.Scarsborough) 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> • Drop-off depot for dry recyclables (including all banned materials) at landfills • Depots located at transfer stations to provide recycling opportunities to self-haul generators (<i>collecting all Expanded Blue Box materials</i>) • Igloos and domes provide opportunities to recycle in public areas • Drop-off depots for multi-family residents not serviced by recycling • Depots for voluntary recycling by residents (e.g.Scarsborough) 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> • Drop-off depot for dry recyclables (including all banned materials) at landfills • Depots located at transfer stations to provide recycling opportunities to self-haul generators • Igloos and domes provide opportunities to recycle in public areas • Drop-off depots for multi-family residents not serviced by recycling • Depots for voluntary recycling by residents (e.g.Scarsborough)
Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> • Seasonal curbside collection of leaf and yard waste 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> • Seasonal curbside collection of leaf and yard waste • <i>New leaf and yard waste bunkers at transfer stations (1994 capital budget)</i> 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> • Seasonal curbside collection of leaf and yard waste • New leaf and yard waste bunkers at transfer stations (1994 capital budget) 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> • Seasonal curbside collection of leaf and yard waste • New leaf and yard waste bunkers at transfer stations (1994 capital budget) 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> • <i>Collection of leaf and yard waste as part of three stream pick-up</i> • <i>Separate brush collection</i> • New leaf and yard waste bunkers at transfer stations (1994 capital budget) 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> • Seasonal curbside collection of leaf and yard waste. • New leaf and yard waste bunkers at transfer stations (1994 capital budget)

TABLE A.2
METRO TORONTO:
RESIDENTIAL SYSTEM COMPONENTS
(continued)

Residential Household Composting <ul style="list-style-type: none"> • Backyard composter distribution programs (105,000 units to date) • Sale of 3-bin units to some multi-family dwellings at \$150 each (25 units by end of 1992) • Limited community composting • Limited vermicomposting 	Residential Household Composting <ul style="list-style-type: none"> • Backyard composter distribution programs (105,000 units to date) • Distribution of an additional 15,000 to 20,000 backyard composters, to bring the total distributed by Metro to between 120,000 and 125,000. • Sale of 3-bin units to some multi-family dwellings at \$150 each (25 units by end of 1992) • Additional community composting • Additional vermicomposting 	Residential Household Composting <ul style="list-style-type: none"> • Door to door distribution of backyard composters to 80% of single family households. • Large 3-bin composting units distributed to apartment and co-operative housing complexes • Promotion of vermicomposting to multi-family units • Promotion of community composting 	Residential Household Composting <ul style="list-style-type: none"> • Door to door distribution of backyard composters to 80% of single family households. • Large 3-bin composting units distributed to apartment and co-operative housing complexes • Promotion of vermicomposting to multi-family units • Promotion of community composting 	Residential Household Composting <ul style="list-style-type: none"> • Door to door distribution of backyard composters to 80% of single family households. • Large 3-bin composting units distributed to apartment and co-operative housing complexes on a voluntary basis. • Promotion of vermicomposting to multi-family units • Promotion of community composting 	Residential Household Composting <ul style="list-style-type: none"> • Door to door distribution of backyard composters to 80% of single family households. • Large 3-bin composting units distributed to apartment and co-operative housing complexes. • Promotion of vermicomposting to multi-family units • Promotion of community composting
Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.). <ul style="list-style-type: none"> • Special curbside collections of Christmas trees • Curbside collection of white goods • Drop-off depots for white goods • Ten (10) permanent drop-off depots for HHW (8 in Metro, 1 at Keele Valley Landfill, one at Brock Road West landfill.) • Two Toxic Taxis 	Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.). <ul style="list-style-type: none"> • Special curbside collections of Christmas trees • Curbside collection of white goods • Drop-off depots for white goods • Ten (10) permanent drop-off depots for HHW (8 in Metro, 1 at Keele Valley Landfill, one at Brock Road West landfill.) • Two Toxic Taxis 	Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.). <ul style="list-style-type: none"> • Special curbside collections of Christmas trees • Curbside collection of white goods • Drop-off depots for white goods • Ten (10) permanent drop-off depots for HHW (8 in Metro, 1 at Keele Valley Landfill, one at Brock Road West landfill.) • Two Toxic Taxis 	Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.). <ul style="list-style-type: none"> • Special curbside collections of Christmas trees • Curbside collection of white goods • Drop-off depots for white goods • Drop-off depots for white goods (8) permanent drop-off depots for HHW (8 in Metro, 1 at Keele Valley Landfill, one at Brock Road West landfill.) • Two Toxic Taxis 	Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.). <ul style="list-style-type: none"> • Special curbside collections of Christmas trees • Curbside collection of white goods • Drop-off depots for white goods • Ten (10) permanent drop-off depots for HHW (8 in Metro, 1 at Keele Valley Landfill, one at Brock Road West landfill.) • Two Toxic Taxis 	Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods, etc.) <ul style="list-style-type: none"> • Special curbside collections of Christmas trees • Curbside collection of white goods • Drop-off depots for white goods • Drop-off depots for white goods (8) permanent drop-off depots for HHW (8 in Metro, 1 at Keele Valley Landfill, one at Brock Road West landfill.) • Two Toxic Taxis

TABLE A.2
METRO TORONTO:
RESIDENTIAL SYSTEM COMPONENTS
(continued)

Composting Facilities <ul style="list-style-type: none"> Centralized windrow composting of leaf and yard waste in North York (3 sites), Scarborough (1 site), Etobicoke (1 site), and at Keele Valley (Metro operated Avondale Site) 	Composting Facilities <ul style="list-style-type: none"> Centralized windrow composting of leaf and yard waste in North York (3 sites), Scarborough (1 site), Etobicoke (1 site), and at Keele Valley (Metro operated Avondale Site). 	Composting Facilities <ul style="list-style-type: none"> Centralized windrow composting of leaf and yard waste in North York (3 sites), Scarborough (1 site), Etobicoke (1 site), and at Keele Valley (Metro operated Avondale Site). 	Composting Facilities <ul style="list-style-type: none"> Centralized windrow composting of leaf and yard waste in North York (3 sites), Scarborough (1 site), Etobicoke (1 site), and at Keele Valley (Metro operated Avondale Site). 	Composting Facilities <ul style="list-style-type: none"> Existing centralized windrow leaf and yard waste composting facilities may be closed <i>One new central composting facility (in-vessel) with a capacity to process all household organics and leaf and yard wastes</i> 	Composting Facilities <ul style="list-style-type: none"> Centralized windrow composting of leaf and yard waste in North York (3 sites), Scarborough (1 site), Etobicoke (1 site), and at Keele Valley (Metro operated Avondale Site). <i>Two new mixed waste processing and composting facilities</i>
Reuse Centres and Activities <ul style="list-style-type: none"> Goods exchange days Charitable reuse centres run by social service organizations (Goodwill, Salvation Army, etc.). Food reuse organization (such as Second Harvest). Re-Uze Centre in Scarborough 	Reuse Centres and Activities <ul style="list-style-type: none"> Goods exchange days Charitable reuse centres run by social service organizations (Goodwill, Salvation Army, etc.). Food reuse organization (such as Second Harvest). Re-Uze Centre in Scarborough 	Reuse Centres and Activities <ul style="list-style-type: none"> Goods exchange days Charitable reuse centres run by social service organizations (Goodwill, Salvation Army, etc.). Food reuse organization (such as Second Harvest). Re-Uze Centre in Scarborough 	Reuse Centres and Activities <ul style="list-style-type: none"> Goods exchange days Charitable reuse centres run by social service organizations (Goodwill, Salvation Army, etc.). Food reuse organization (such as Second Harvest). Re-Uze Centre in Scarborough 	Reuse Centres and Activities <ul style="list-style-type: none"> Goods exchange days Charitable reuse centres run by social service organizations (Goodwill, Salvation Army, etc.). Food reuse organization (such as Second Harvest). Re-Uze Centre in Scarborough 	Reuse Centres and Activities <ul style="list-style-type: none"> Goods exchange days Charitable reuse centres run by social service organizations (Goodwill, Salvation Army, etc.). Food reuse organization (such as Second Harvest). Re-Uze Centre in Scarborough

TABLE A.2
METRO TORONTO:
RESIDENTIAL SYSTEM COMPONENTS
(continued)

MRFs	MRFs	MRFs	MRFs	MRFs	MRFs
<ul style="list-style-type: none"> • QUNO MRF on Commissioners Street, which processed fibres and container materials under contract to Metro in 1992. Operation changed in 1993 to process fibres only • CRinc MRF on Commissioners Street, which started operation in May 1992. It processes only container materials (plastic, metals, and glass). The facility is owned by Metro, and is operated under contract by CRinc • Dufferin Street MRF is owned by Metro and operated by QUNO • <i>One new MRF (to meet 20 year requirement)</i> 	<ul style="list-style-type: none"> • QUNO MRF on Commissioners Street, which processes fibres • CRinc MRF on Commissioners Street processes container materials (plastic, metals, and glass). The facility is owned by Metro, and is operated under contract by CRinc. • Dufferin Street MRF is owned by Metro and operated by QUNO • <i>One new MRF for processing dry recyclables to meet 20 year requirements</i> 	<ul style="list-style-type: none"> • QUNO MRF on Commissioners Street, which processes fibres • CRinc MRF on Commissioners Street processes container materials (plastic, metals, and glass). The facility is owned by Metro, and is operated under contract by CRinc. • Dufferin Street MRF is owned by Metro and operated by QUNO • <i>One new MRF for processing dry recyclables (to meet 20 year requirement)</i> 	<ul style="list-style-type: none"> • QUNO MRF on Commissioners Street, which processes fibres • CRinc MRF on Commissioners Street processes container materials (plastic, metals, and glass). The facility is owned by Metro, and is operated under contract by CRinc. • Dufferin Street MRF is owned by Metro and operated by QUNO • <i>One new MRF for processing dry recyclables (to meet 20 year requirement)</i> 	<ul style="list-style-type: none"> • QUNO MRF on Commissioners Street, which processes fibres • CRinc MRF on Commissioners Street processes container materials (plastic, metals, and glass). The facility is owned by Metro, and is operated under contract by CRinc. • Dufferin Street MRF is owned by Metro and operated by QUNO • <i>One new MRF for processing dry recyclables (to meet 20 year requirement)</i> 	<ul style="list-style-type: none"> • QUNO MRF on Commissioners Street, which processes fibres • CRinc MRF on Commissioners Street processes container materials (plastic, metals, and glass). The facility is owned by Metro, and is operated under contract by CRinc. • Dufferin Street MRF is owned by Metro and operated by QUNO • <i>One new MRF for processing dry recyclables (to meet 20 year requirement)</i>

TABLE A.2
METRO TORONTO:
RESIDENTIAL SYSTEM COMPONENTS
(continued)

Residential Promotion and Education	Residential Promotion and Education	Residential Promotion and Education	Residential Promotion and Education	Residential Promotion and Education	Residential Promotion and Education
<ul style="list-style-type: none"> • Extensive promotion and education campaign on composting by the residential sector, which includes the Master Composter program operated for Metro by RCO, a compost information hotline, radio and newspaper advertisements, and backyard composting manuals in many languages • Extensive 3Rs promotion and education program, focused on the residential sector, which includes publishing "Your Guide to Reduction and Recycling in Metropolitan Toronto" • Consumer education program to reduce waste generation, includes videos, posters, calendars, pamphlets, advertisements etc. 	<ul style="list-style-type: none"> • Extensive promotion and education campaign on composting by the residential sector, which includes the Master Composter program operated for Metro by RCO, a compost information hotline, radio and newspaper advertisements, and backyard composting manuals in many languages • Extensive 3Rs promotion and education program, focused on the residential sector, which includes publishing "Your Guide to Reduction and Recycling in Metropolitan Toronto" • Consumer education program to reduce waste generation, includes videos, posters, calendars, pamphlets, advertisements etc. 	<ul style="list-style-type: none"> • Extensive promotion and education campaign on composting by the residential sector, which includes the Master Composter program operated for Metro by RCO, a compost information hotline, radio and newspaper advertisements, and backyard composting manuals in many languages • Extensive 3Rs promotion and education program, focused on the residential sector, which includes publishing "Your Guide to Reduction and Recycling in Metropolitan Toronto" • Consumer education program to reduce waste generation, includes videos, posters, calendars, pamphlets, advertisements etc. • <i>Promotion/education on Direct Cost program</i> • <i>Promotion/education program on source reduction, pre-cycling, composting, reuse and recycling</i> 	<ul style="list-style-type: none"> • Extensive promotion and education campaign on composting by the residential sector, which includes the Master Composter program operated for Metro by RCO, a compost information hotline, radio and newspaper advertisements, and backyard composting manuals in many languages • Extensive 3Rs promotion and education program, focused on the residential sector, which includes publishing "Your Guide to Reduction and Recycling in Metropolitan Toronto" • Consumer education program to reduce waste generation, includes videos, posters, calendars, pamphlets, advertisements etc. • <i>Promotion/education on Expanded Blue Box program.</i> • <i>Promotion/education program on source reduction, pre-cycling, composting, reuse and recycling.</i> 	<ul style="list-style-type: none"> • Extensive promotion and education campaign on composting by the residential sector, which includes the Master Composter program operated for Metro by RCO, a compost information hotline, radio and newspaper advertisements, and backyard composting manuals in many languages • Extensive 3Rs promotion and education program, focused on the residential sector, which includes publishing "Your Guide to Reduction and Recycling in Metropolitan Toronto" • Consumer education program to reduce waste generation, includes videos, posters, calendars, pamphlets, advertisements etc. • <i>Promotion/education for Wet/Dry system</i> • <i>Promotion/education for source reduction, pre-cycling, composting, reuse, and recycling.</i> 	<ul style="list-style-type: none"> • Extensive promotion and education campaign on composting by the residential sector, which includes the Master Composter program operated for Metro by RCO, a compost information hotline, radio and newspaper advertisements, and backyard composting manuals in many languages • Extensive 3Rs promotion and education program, focused on the residential sector, which includes publishing "Your Guide to Reduction and Recycling in Metropolitan Toronto" • Consumer education program to reduce waste generation, includes videos, posters, calendars, pamphlets, advertisements etc. • <i>Promotion/education for source reduction, pre-cycling, composting, reuse and recycling.</i>

**TABLE A.3
YORK REGION
RESIDENTIAL SYSTEM COMPONENTS**

System 1: Existing	System 2: Existing/Committed	System 3: Direct Cost	System 4: Expanded Blue Box	System 5: Wet/Dry	System 6: Mixed Waste Processing
Garbage Collection and Disposal <ul style="list-style-type: none"> • Curbside collection of residential garbage from single family dwellings • Collection of residential garbage from multi-family units by private contractors • Self haul of waste to landfills and transfer stations by residents • Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads • Limit on number of bags/containers set-out for garbage collection (King City) 	Garbage Collection and Disposal <ul style="list-style-type: none"> • Curbside collection of residential garbage from single family dwellings • Collection of residential garbage from multi-family units by private contractors • Self haul of waste to landfills and transfer stations by residents • Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads • Limit on number of bags/containers set-out for garbage collection 	Garbage Collection and Disposal <ul style="list-style-type: none"> • Curbside collection of residential garbage from single family dwellings • <i>Direct cost system for garbage collection</i> • Collection of residential garbage from multi-family units by private contractors • Self haul of waste to landfills and transfer stations by residents • Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads • Limit on number of bags/containers set-out for garbage collection 	Garbage Collection and Disposal <ul style="list-style-type: none"> • Curbside collection of residential garbage from single family dwellings • Collection of residential garbage from multi-family units by private contractors • Self haul of waste to landfills and transfer stations by residents • Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads • Limit on number of bags/containers set-out for garbage collection 	Garbage Collection <ul style="list-style-type: none"> • <i>Curbside collection of residential waste from single family dwellings in three streams by specially designed trucks by municipal forces or contractors to municipalities</i> • <i>Collection of residential garbage from multi-family units in three streams by municipal forces or private contractors, where feasible</i> • Self haul of waste to landfills and transfer stations by residents • Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads • Limit on number of bags/containers set-out for garbage collection 	Garbage Collection and Disposal <ul style="list-style-type: none"> • Curbside collection of residential garbage from single family dwellings • Collection of residential garbage from multi-family units by private contractors • Self haul of waste to landfills and transfer stations by residents • Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads • Limit on number of bags/containers set-out for garbage collection

TABLE A.3
YORK REGION
RESIDENTIAL SYSTEM COMPONENTS
(continued)

<p>Residential Recycling and Collection</p> <ul style="list-style-type: none"> • Curbside collection of dry recyclables by municipal forces or private contractors • Materials collected by different municipalities include: ONP, glass, steel, aluminum, PET, OCC, telephone directories, HDPE, rigid and other plastics • Assume collection of bins of recyclables from multi-family units 	<p>Residential Recycling and Collection</p> <ul style="list-style-type: none"> • <i>Curbside collection of dry recyclables by municipal forces or private contractors</i> • <i>Expansion of curbside collection of Blue Box materials from single family dwellings in some municipalities to include all materials designated basic Blue Box waste and at least two materials designated as supplementary Blue Box waste in the 3Rs Regulations</i> • <i>Curbside collection of additional dry materials</i> • <i>Recycling services at all multi-family buildings with 6 or more units (3Rs Regulations)</i> • <i>Collection of bins of recyclables from multi-family units</i> 	<p>Residential Recycling and Collection</p> <ul style="list-style-type: none"> • Curbside collection of dry recyclables by municipal forces or private contractors • Expansion of curbside collection of Blue Box materials from single family dwellings in some municipalities to include all materials designated basic Blue Box waste and at least two materials designated as supplementary Blue Box waste in the 3Rs Regulations • Curbside collection of additional dry materials • Recycling services at all multi-family buildings with 6 or more units (3Rs Regulations) • Collection of bins of recyclables from multi-family units 	<p>Residential Recycling and Collection</p> <ul style="list-style-type: none"> • <i>Curbside collection of Expanded Blue Box materials including plastics, (PET, rigid plastic, bottles & tubes, film plastic, foam plastic and rigid trays); paper fibre (ONP, OCC, boxboard, polycoat, phone books, magazines and catalogues and mixed household paper); metal (steel and aluminum cans, aluminum trays and foil), clear and coloured glass and textiles</i> • <i>Recycling services for full range of Expanded Blue Box materials at all multi-family buildings with 6 or more units</i> • <i>Collection of bins of recyclables (collecting all Expanded Blue Box materials) from multi-family units</i> 	<p>Residential Recycling and Collection</p> <ul style="list-style-type: none"> • <i>Provide carts to all single family households and some "other" households</i> • <i>Separation of waste into three streams (wet, dry, and garbage) by the householder</i> • <i>Expanded set of dry materials to be collected, including plastics, (PET, rigid plastic, bottles & tubes, film plastic, foam plastic and rigid trays); paper fibre (ONP, OCC, boxboard, polycoat, phone books, magazines and catalogues and mixed household paper); metal (steel and aluminum cans, aluminum trays and foil), clear and coloured glass and textiles</i> • <i>Recycling services at all multi-family buildings with 6 or more units (3Rs Regulations)</i> • <i>Large bins provided in the garbage management area of multi-family buildings if space permits. Residents will be encouraged to separate their waste into three separate bags</i> 	<p>Residential Recycling and Collection</p> <ul style="list-style-type: none"> • Expansion of curbside collection of Blue Box materials from single family dwellings in some municipalities to include all materials designated basic Blue Box waste and at least two materials designated as supplementary Blue Box waste in the 3Rs Regulations • Curbside collection of additional dry materials • Recycling services at all multi-family buildings with 6 or more units (3Rs Regulations) • Collection of bins of recyclables from multi-family units
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TABLE A.3
YORK REGION
RESIDENTIAL SYSTEM COMPONENTS
(continued)

Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> Assume drop-off depots for multi-family residents not serviced by recycling Assume drop-off depot for rural households Depot at Markham for boxboard, mixed paper, scrap metal and tires, in addition to Blue Box materials 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> <i>Drop-off depots for multi-family residents not serviced by recycling</i> <i>Some additional recycling service to multi-family units</i> <i>Some additional recycling at new depots</i> Depot at Markham for boxboard, mixed paper, scrap metal and tires, in addition to Blue Box materials 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> Drop-off depots for multi-family residents not serviced by recycling Some additional recycling service to multi-family units Some additional recycling at new depots Depot at Markham for boxboard, mixed paper, scrap metal and tires, in addition to Blue Box materials 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> <i>Drop-off depots for multi-family residents not serviced by recycling (collecting all Expanded Blue Box materials)</i> <i>Drop-off depot for rural households (collecting all Expanded Blue Box materials)</i> Depot at Markham for boxboard, mixed paper, scrap metal and tires, in addition to Blue Box materials 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> Drop-off depots for multi-family residents not serviced by recycling. Drop-off depot for rural households. Depot at Markham for boxboard, mixed paper, scrap metal and tires, in addition to Blue Box materials 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> Drop-off depots for multi-family residents not serviced by recycling Some additional recycling service to multi-family units Some additional recycling at new depots Depot at Markham for boxboard, mixed paper, scrap metal and tires, in addition to Blue Box materials
Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> Seasonal curbside collection of leaf and yard waste Drop-off depot for leaf and yard waste at regions composting site - no charge to residents 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> Seasonal curbside collection of leaf and yard waste Drop-off depot for leaf and yard waste at regions composting site - no charge to residents 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> Seasonal curbside collection of leaf and yard waste Drop-off depot for leaf and yard waste at regions composting site - no charge to residents 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> Seasonal curbside collection of leaf and yard waste Drop-off depot for leaf and yard waste at regions composting site - no charge to residents 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> <i>Collection of leaf and yard waste as part of three stream pick-up</i> <i>Separate brush collection</i> 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> Seasonal curbside collection of leaf and yard waste Drop-off depot for leaf and yard waste at regions composting site - no charge to residents
Residential Household Composting <ul style="list-style-type: none"> Backyard composter distribution programs (29,050 composters by end of 1992) Limited community composting Limited vermicomposting 	Residential Household Composting <ul style="list-style-type: none"> Backyard composter distribution programs (29,050 composters by end of 1992) Distribution of additional backyard composters by individual municipalities Additional community composting Additional vermicomposting 	Residential Household Composting <ul style="list-style-type: none"> <i>Door to door distribution of backyard composters to 80% of single family households.</i> <i>Large 3-bin composting units distributed to apartment and co-operative housing complexes</i> <i>Promotion of vermicomposting to multi-family units</i> <i>Promotion of community composting</i> 	Residential Household Composting <ul style="list-style-type: none"> <i>Door to door distribution of backyard composters to 80% of single family households.</i> <i>Promotion of large 3-bin composting units distributed to apartment and co-operative housing complexes</i> <i>Promotion of vermicomposting to multi-family units</i> <i>Promotion of community composting</i> 	Residential Household Composting <ul style="list-style-type: none"> <i>Door to door distribution of backyard composters to 80% of single family households.</i> <i>Promotion of large 3-bin composting units distributed to apartment and co-operative housing complexes</i> <i>Promotion of vermicomposting to multi-family units</i> <i>Promotion of community composting</i> 	Residential Household Composting <ul style="list-style-type: none"> <i>Door to door distribution of backyard composters to 80% of single family households.</i> <i>Promotion of large 3-bin composting units distributed to apartment and co-operative housing complexes</i> <i>Promotion of vermicomposting to multi-family units</i> <i>Promotion of community composting</i>

TABLE A.3
YORK REGION
RESIDENTIAL SYSTEM COMPONENTS
(continued)

<p>Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.).</p> <ul style="list-style-type: none"> • Special curbside collections of Christmas trees • Curbside collection of white goods in all municipalities - frequency varies • Drop-off depots for white goods (King Township) • Mobile HHW depots • HHW collection days (some municipalities) 	<p>Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.).</p> <ul style="list-style-type: none"> • Special curbside collections of Christmas trees • Curbside collection of white goods in all municipalities - frequency varies • Drop-off depots for white goods (King Township) • Mobile HHW depots • HHW collection days (some municipalities) 	<p>Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.).</p> <ul style="list-style-type: none"> • Special curbside collections of Christmas trees • Curbside collection of white goods in all municipalities - frequency varies • Drop-off depots for white goods (King Township) • Mobile HHW depots • HHW collection days (some municipalities) 	<p>Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.).</p> <ul style="list-style-type: none"> • Special curbside collections of Christmas trees • Curbside collection of white goods in all municipalities - frequency varies • Drop-off depots for white goods (King Township) • Mobile HHW depots • HHW collection days (some municipalities) 	<p>Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.).</p> <ul style="list-style-type: none"> • Special curbside collections of Christmas trees • Curbside collection of white goods in all municipalities - frequency varies • Drop-off depots for white goods (King Township) • Mobile HHW depots • HHW collection days (some municipalities) 	<p>Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.).</p> <ul style="list-style-type: none"> • Special curbside collections of Christmas trees • Curbside collection of white goods in all municipalities - frequency varies • Drop-off depots for white goods (King Township) • Mobile HHW depots • HHW collection days (some municipalities)
<p>Composting Facilities</p> <ul style="list-style-type: none"> • Centralized windrow composting of leaf and yard waste (operated by Miller Waste Systems) 	<p>Composting Facilities</p> <ul style="list-style-type: none"> • Centralized windrow composting of leaf and yard waste 	<p>Composting Facilities</p> <ul style="list-style-type: none"> • Centralized windrow composting of leaf and yard waste 	<p>Composting Facilities</p> <ul style="list-style-type: none"> • Centralized windrow composting of leaf and yard waste 	<p>Composting Facilities</p> <ul style="list-style-type: none"> • Existing centralized windrow leaf and yard waste composting facilities may be closed • <i>New central composting facility (in vessel) for composting of source separated household organics (wet stream) and leaf and yard waste</i> 	<p>Composting Facilities</p> <ul style="list-style-type: none"> • Centralized windrow composting of leaf and yard waste • <i>New mixed waste processing and composting facility</i>
<p>Reuse Centres and Activities</p> <ul style="list-style-type: none"> • Goods exchange days in Richmond Hill 	<p>Reuse Centres and Activities</p> <ul style="list-style-type: none"> • Goods exchange days in Richmond Hill 	<p>Reuse Centres and Activities</p> <ul style="list-style-type: none"> • Goods exchange days in Richmond Hill 	<p>Reuse Centres and Activities</p> <ul style="list-style-type: none"> • Goods exchange days in Richmond Hill 	<p>Reuse Centres and Activities</p> <ul style="list-style-type: none"> • Goods exchange days in Richmond Hill 	<p>Reuse Centres and Activities</p> <ul style="list-style-type: none"> • Goods exchange days in Richmond Hill

TABLE A.3
YORK REGION
RESIDENTIAL SYSTEM COMPONENTS
(continued)

MRFs	MRFs	MRFs	MRFs	MRFs	MRFs
<ul style="list-style-type: none"> • Markham MRF owned by Markham but operated by Miller Waste Systems. Currently operating on a temporary basis (will be replaced by new regional facility that is being built). Processes ONP, container materials and other recyclables - 15,300 tonnes in 1992 • Richmond Hill MRF operated by Miller - 8,400 tonnes processed in 1992. It too will be replaced by planned regional facility • New MRF will be required to meet 20 year needs • Existing MRFs will close when new MRF constructed 	<ul style="list-style-type: none"> • New MRF will be required to meet 20 year needs • Existing/committed MRF in capital budget (\$2.2 million) in operation in 1993 • Other MRFs will close when new MRF constructed 	<ul style="list-style-type: none"> • <i>One new Regional MRF for processing of dry recyclables</i> • MRF in existing/committed system would close when new MRF operational 	<ul style="list-style-type: none"> • <i>One new Regional MRF for processing of dry recyclables</i> • MRF in existing/committed system would close when new MRF operational 	<ul style="list-style-type: none"> • <i>One new Regional MRF for processing of dry recyclables</i> • MRF in existing/committed system would close when new MRF operational 	<ul style="list-style-type: none"> • One new Regional MRF for processing of dry recyclables • MRF in existing/committed system would close when new MRF operational

TABLE A.3
YORK REGION
RESIDENTIAL SYSTEM COMPONENTS
(continued)

Residential Promotion and Education	Residential Promotion and Education	Residential Promotion and Education	Residential Promotion and Education	Residential Promotion and Education	Residential Promotion and Education
<ul style="list-style-type: none"> • Region only advertises HHW and leaf and yard waste programs. Other programs are left to the municipalities • Municipalities conduct extensive promotion through advertising, brochures, hotline phone service and information flyers • Richmond Hill and Markham conducted extensive door to door sales campaigns for composters with assistance from students. Markham also conducted a number of seminars for the general public and schools 	<ul style="list-style-type: none"> • Region only advertises HHW and leaf and yard waste programs. Other programs are left to the municipalities • Municipalities conduct extensive promotion through advertising, brochures, hotline phone service and information flyers • Richmond Hill and Markham conducted extensive door to door sales campaigns for composters with assistance from students. Markham also conducted a number of seminars for the general public and schools 	<ul style="list-style-type: none"> • Region only advertises HHW and leaf and yard waste programs. Other programs are left to the municipalities • Municipalities conduct extensive promotion through advertising, brochures, hotline phone service and information flyers • Richmond Hill and Markham conducted extensive door to door sales campaigns for composters with assistance from students. Markham also conducted a number of seminars for the general public and schools • <i>Promotion/education program on direct cost system</i> • <i>Promotion/education program on source reduction, pre-cycling, reuse and recycling</i> 	<ul style="list-style-type: none"> • Region only advertises HHW and leaf and yard waste programs. Other programs are left to the municipalities • Municipalities conduct extensive promotion through advertising, brochures, hotline phone service and information flyers • Richmond Hill and Markham conducted extensive door to door sales campaigns for composters with assistance from students. Markham also conducted a number of seminars for the general public and schools • <i>Promotion/education program on Expanded Blue Box program</i> • <i>Promotion/education program on source reduction, pre-cycling, reuse and recycling</i> 	<ul style="list-style-type: none"> • Region only advertises HHW and leaf and yard waste programs. Other programs are left to the municipalities • Municipalities conduct extensive promotion through advertising, brochures, hotline phone service and information flyers • Richmond Hill and Markham conducted extensive door to door sales campaigns for composters with assistance from students. Markham also conducted a number of seminars for the general public and schools • <i>Promotion/education program for wet/dry system</i> • <i>Promotion/education program for source reduction, pre-cycling, reuse, recycling</i> 	<ul style="list-style-type: none"> • Region only advertises HHW and leaf and yard waste programs. Other programs are left to the municipalities • Municipalities conduct extensive promotion through advertising, brochures, hotline phone service and information flyers • Richmond Hill and Markham conducted extensive door to door sales campaigns for composters with assistance from students. Markham also conducted a number of seminars for the general public and schools • <i>Promotion/education program on source reduction, pre-cycling, reuse and recycling</i>

**TABLE A.4
PEEL REGION
RESIDENTIAL SYSTEM COMPONENTS**

System 1: Existing	System 2: Existing/Committed	System 3: Direct Cost	System 4: Expanded Blue Box	System 5: Wet/Dry	System 6: Mixed Waste Processing
Garbage Collection and Disposal <ul style="list-style-type: none"> • Curbside collection of residential garbage from single family dwellings by municipal forces or contractors to municipalities • Collection of residential garbage from multi-family units by municipal forces or private contractors • Self haul of garbage to landfills and transfer stations by residents • Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads 	Garbage Collection and Disposal <ul style="list-style-type: none"> • Curbside collection of residential garbage from single family dwellings by municipal forces or contractors to municipalities • Collection of residential garbage from multi-family units by municipal forces or private contractors • Self haul of garbage to landfills and transfer stations by residents • Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads 	Garbage Collection and Disposal <ul style="list-style-type: none"> • Curbside collection of residential garbage from single family dwellings by municipal forces or contractors to municipalities • Collection of residential garbage from multi-family units by municipal forces or private contractors • Self haul of garbage to landfills and transfer stations by residents • <i>Direct cost system for garbage collection.</i> • Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads 	Garbage Collection and Disposal <ul style="list-style-type: none"> • Curbside collection of residential garbage from single family dwellings by municipal forces or contractors to municipalities • Collection of residential garbage from multi-family units by municipal forces or private contractors • Self haul of garbage to landfills and transfer stations by residents • Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads 	Garbage Collection <ul style="list-style-type: none"> • <i>Curbside collection of residential waste from single family dwellings in three streams by specially designed trucks by municipal forces or contractors to municipalities.</i> • <i>Collection of residential garbage from multi-family units in three streams, where feasible by municipal forces or private contractors.</i> • Self haul of garbage to landfills and transfer stations by residents • Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads 	Garbage Collection and Disposal <ul style="list-style-type: none"> • Curbside collection of residential garbage from single family dwellings by municipal forces or contractors to municipalities • Collection of residential garbage from multi-family units by municipal forces or private contractors • Self haul of garbage to landfills and transfer stations by rural residents • Landfill bans on some items (e.g. recyclable materials, tires, white goods, etc.) with disposal surcharges and rejection of some loads

TABLE A.4
PEEL REGION
RESIDENTIAL SYSTEM COMPONENTS
(continued)

Residential Recycling and Collection	Residential Recycling and Collection	Residential Recycling and Collection	Residential Recycling and Collection	Residential Recycling and Collection	Residential Recycling and Collection
<ul style="list-style-type: none"> • Curbside collection of Blue Box materials from single family dwellings and some apartment buildings. Typical materials include at least ONP, PET, glass, ferrous, aluminum (Caledon), these and telephone directories in Brampton • Expanded curbside collection (Mississauga) to collect additional materials (HDPE, mixed plastic, textiles, OMG, OCC) • Collection of bins of recyclables from multi-family units 	<ul style="list-style-type: none"> • <i>Curbside collection of Blue Box materials from single family dwellings and some apartment buildings includes all materials designated basic Blue Box waste and at least two materials designated as supplementary Blue Box waste in the 3Rs Regulations</i> • Expanded curbside collection (Mississauga) to collect additional materials (HDPE, mixed plastic, textiles, OMG, OCC) • <i>Recycling services at all multi-family buildings with 6 or more units (3Rs Regulations)</i> • Collection of bins of recyclables from multi-family units 	<ul style="list-style-type: none"> • Curbside collection of Blue Box materials from single family dwellings and some apartment buildings includes all materials designated basic Blue Box waste and at least two materials designated as supplementary Blue Box waste in the 3Rs Regulations • Expanded curbside collection (Mississauga) to collect additional materials (HDPE, mixed plastic, textiles, OMG, OCC) • Recycling services at all multi-family buildings with 6 or more units (3Rs Regulations) • Collection of bins of recyclables from multi-family units 	<ul style="list-style-type: none"> • <i>Curbside collection of Expanded Blue Box materials including plastics (PET, rigid plastic, bottles & tubes, film plastic, foam plastic and rigid trays); paper fibre (ONP, OCC, boxboard, polycoat, phone books, magazines and catalogues and mixed household paper); metal (steel and aluminum cans, aluminum trays and foil), clear and coloured glass and textiles</i> • <i>Recycling services for full range of Expanded Blue Box materials at all multi-family buildings with 6 or more units</i> • <i>Collection of bins of recyclables (collecting all Expanded Blue Box materials) from multi-family units</i> 	<ul style="list-style-type: none"> • <i>Provide carts to all single family and some "other" households.</i> • <i>Separation of waste into three streams (wet, dry and garbage) by the householder.</i> • <i>Expanded set of dry materials to be collected, including plastics, (PET, rigid plastic, bottles & tubes, film plastic, foam plastic and rigid trays); paper fibre (ONP, OCC, boxboard, polycoat, phone books, magazines and catalogues and mixed household paper); metal (steel and aluminum cans, aluminum trays and foil), clear and coloured glass and textiles</i> • Recycling services at all multi-family buildings with 6 or more units (3Rs Regulations) • <i>Large bins provided in the garbage management area of multi-family buildings, where space available. Residents will be encouraged to separate their waste into three separate bags</i> 	<ul style="list-style-type: none"> • Curbside collection of Blue Box materials from single family dwellings and some apartment buildings includes all materials designated basic Blue Box waste and at least two materials designated as supplementary Blue Box waste in the 3Rs Regulations • Expanded curbside collection (Mississauga) to collect additional materials (HDPE, mixed plastic, textiles, OMG, OCC) • Recycling services at all multi-family buildings with 6 or more units (3Rs Regulations) • Collection of bins of recyclables from multi-family units

TABLE A.4
PEEL REGION
RESIDENTIAL SYSTEM COMPONENTS
(continued)

Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> Drop-off depot for dry recyclables (including all banned materials) at Britannia landfill Depots located at transfer stations to provide recycling opportunities to self-haul generators Drop-off depots for multi-family residents not serviced by recycling Drop-off depots for rural households 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> Drop-off depot for dry recyclables (including all banned materials) at Britannia landfill Depots located at transfer stations to provide recycling opportunities to self-haul generators Drop-off depots for multi-family residents not serviced by recycling. Drop-off depots for rural households 7 community recycling centres: 3 in Mississauga, 2 in Brampton, and 2 in Caledon, to accept recyclables, household hazardous waste, reusable items and residential waste. Construction of satellite drop-off facilities for recycling (Neighbourhood Recycling Depots and Mini Recycling Depots) 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> Drop-off depot for dry recyclables (including all banned materials) at Britannia landfill Depots located at transfer stations to provide recycling opportunities to self-haul generators Drop-off depots for multi-family residents not serviced by recycling. Drop-off depots for rural households 7 community recycling centres: 3 in Mississauga, 2 in Brampton, and 2 in Caledon, to accept recyclables, household hazardous waste, reusable items and residential waste. Construction of satellite drop-off facilities for recycling (Neighbourhood Recycling Depots and Mini Recycling Depots) 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> Drop-off depot for dry recyclables (including all banned materials) at Britannia landfill Depots located at transfer stations to provide recycling opportunities to self-haul generators Drop-off depots for multi-family residents not serviced by recycling, for full range of Expanded Blue Box materials. Drop-off depots for rural households (collecting all Expanded Blue Box materials) 7 community recycling centres: 3 in Mississauga, 2 in Brampton, and 2 in Caledon, to accept recyclables, household hazardous waste, reusable items and residential waste. Construction of satellite drop-off facilities for recycling (Neighbourhood Recycling Depots and Mini Recycling Depots) 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> Drop-off depot for dry recyclables (including all banned materials) at Britannia landfill Depots located at compost facility to provide recycling opportunities to self-haul generators Drop-off depots for multi-family residents not serviced by recycling Drop-off depots for rural households 7 community recycling centres: 3 in Mississauga, 2 in Brampton, and 2 in Caledon, to accept recyclables, household hazardous waste, reusable items and residential waste. Construction of satellite drop-off facilities for recycling (Neighbourhood Recycling Depots and Mini Recycling Depots) 	Residential Recycling Depots and Transfer Stations <ul style="list-style-type: none"> Drop-off depot for dry recyclables (including all banned materials) at Britannia landfill Depots located at transfer stations to provide recycling opportunities to self-haul generators 7 community recycling centres: 3 in Mississauga, 2 in Brampton, and 2 in Caledon, to accept recyclables, household hazardous waste, reusable items and residential waste. Construction of satellite drop-off facilities for recycling (Neighbourhood Recycling Depots and Mini Recycling Depots)
Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> Limited seasonal curbside collection of leaf and yard waste 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> Seasonal curbside collection of leaf and yard waste May be some drop-off depots for leaf and yard waste (3Rs Regulations) 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> Seasonal curbside collection of leaf and yard waste May be some drop-off depots for leaf and yard waste (3Rs Regulations) 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> Seasonal curbside collection of leaf and yard waste May be some drop-off depots for leaf and yard waste (3Rs Regulations) 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> Collection of leaf and yard waste as part of three stream pick-up Separate brush collection May be some drop-off depots for leaf and yard waste (3Rs Regulations) 	Residential Leaf and Yard Waste Collection <ul style="list-style-type: none"> Seasonal curbside collection of leaf and yard waste May be some drop-off depots for leaf and yard waste (3Rs Regulations)

TABLE A.4
PEEL REGION
RESIDENTIAL SYSTEM COMPONENTS
(continued)

Residential Household Composting <ul style="list-style-type: none"> • Backyard composter distribution programs (56,839 units to end of 1992) • Limited community composting • Limited vermicomposting 	Residential Household Composting <ul style="list-style-type: none"> • Backyard composter distribution programs (56,839 units to end of 1992) • Backyard composters to be used in 68,839 single family – households, an addition of 12,000 to existing system • Additional community composting • Additional vermicomposting 	Residential Household Composting <ul style="list-style-type: none"> • Door to door distribution of backyard composters to 80% of single family households. • Large 3-bin composting units distributed to apartment and co-operative housing complexes. • Promotion of vermicomposting to multi-family units • Promotion of community composting 	Residential Household Composting <ul style="list-style-type: none"> • Door to door distribution of backyard composters to 80% of single family households. • Large 3-bin composting units distributed to apartment and co-operative housing complexes • Promotion of vermicomposting to multi-family units • Promotion of community composting 	Residential Household Composting <ul style="list-style-type: none"> • Door to door distribution of backyard composters to 80% of single family households. • Large 3-bin composting units distributed to apartment and co-operative housing complexes. • Promotion of vermicomposting to multi-family units • Promotion of community composting 	Residential Household Composting <ul style="list-style-type: none"> • Door to door distribution of backyard composters to 80% of single family households. • Large 3-bin composting units distributed to apartment and co-operative housing complexes. • Promotion of vermicomposting to multi-family units • Promotion of community composting
Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.) <ul style="list-style-type: none"> • Special curbside collections of Christmas trees • Special curbside collections of white goods • Drop-off depots for white goods • Once a year HHW collection at Bolton Community Centre • Permanent drop-off depot for HHW at the Britannia Road landfill 	Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.) <ul style="list-style-type: none"> • Special curbside collections of Christmas trees • Special curbside collections of white goods • Drop-off depots for white goods • Once a year HHW collection at Bolton Community Centre • Permanent drop-off depot for HHW at the Britannia Road landfill 	Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.) <ul style="list-style-type: none"> • Special curbside collections of Christmas trees following the Christmas season • Special curbside collections of white goods • Drop-off depots for white goods • Once a year HHW collection at Bolton Community Centre • Permanent drop-off depot for HHW at the Britannia Road landfill 	Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.) <ul style="list-style-type: none"> • Special curbside collections of Christmas trees • Special curbside collections of white goods • Drop-off depots for white goods • Once a year HHW collection at Bolton Community Centre • Permanent drop-off depot for HHW at the Britannia Road landfill 	Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.) <ul style="list-style-type: none"> • Special curbside collections of Christmas trees following the Christmas season • Special curbside collections of white goods • Drop-off depots for white goods • Once a year HHW collection at Bolton Community Centre • Permanent drop-off depot for HHW at the Britannia Road landfill 	Other Residential Waste Diversion (HHW, Toxic Taxi, White Goods Collection, White Goods Drop-Off etc.) <ul style="list-style-type: none"> • Special curbside collections of Christmas trees • Special curbside collections of white goods • Drop-off depots for white goods • Once a year HHW collection at Bolton Community Centre • Permanent drop-off depot for HHW at the Britannia Road landfill

TABLE A.4
PEEL REGION
RESIDENTIAL SYSTEM COMPONENTS
(continued)

Composting Facilities <ul style="list-style-type: none"> Centralized windrow composting of leaf and yard waste (at Brampton site, Britannia Road landfill and Caledon landfill) 	Composting Facilities <ul style="list-style-type: none"> Centralized windrow composting of leaf and yard waste (at Brampton site, Britannia Road landfill and Caledon landfill) 	Composting Facilities <ul style="list-style-type: none"> Centralized windrow composting of leaf and yard waste (at Brampton site, Britannia Road landfill and Caledon landfill) 	Composting Facilities <ul style="list-style-type: none"> Centralized windrow composting of leaf and yard waste (at Brampton site, Britannia Road landfill and Caledon landfill) 	Composting Facilities <ul style="list-style-type: none"> Existing centralized windrow leaf and yard waste composting facilities may be closed <i>Central composting facilities (in vessel) for composting of source separated household organics (wet stream) and leaf and yard waste</i> 	Composting Facilities <ul style="list-style-type: none"> Centralized windrow composting of leaf and yard waste (at Brampton site, Britannia Road landfill and Caledon landfill) <i>New mixed waste processing and composting facility</i>
Reuse Centres and Activities <ul style="list-style-type: none"> Municipal reuse centre (Caledon Landfill scavenging centre, Albion & Brampton goods exchanges) Charitable reuse centres run by social service organizations (Goodwill, Salvation Army, etc.) Food reuse organization (such as Second Harvest) 	Reuse Centres and Activities <ul style="list-style-type: none"> Municipal reuse centre (Caledon Landfill scavenging centre, Albion & Brampton goods exchanges) Charitable reuse centres run by social service organizations (Goodwill, Salvation Army, etc.) Food reuse organization (such as Second Harvest) 	Reuse Centres and Activities <ul style="list-style-type: none"> Municipal reuse centre (Caledon Landfill scavenging centre, Albion & Brampton goods exchanges) Charitable reuse centres run by social service organizations (Goodwill, Salvation Army, etc.) Food reuse organization (such as Second Harvest) 	Reuse Centres and Activities <ul style="list-style-type: none"> Municipal reuse centre (Caledon Landfill scavenging centre, Albion & Brampton goods exchanges) Charitable reuse centres run by social service organizations (Goodwill, Salvation Army, etc.) Food reuse organization (such as Second Harvest) 	Reuse Centres and Activities <ul style="list-style-type: none"> Municipal reuse centre (Caledon Landfill scavenging centre, Albion & Brampton goods exchanges) Charitable reuse centres run by social service organizations (Goodwill, Salvation Army, etc.) Food reuse organization (such as Second Harvest) 	Reuse Centres and Activities <ul style="list-style-type: none"> Municipal reuse centre (Caledon Landfill scavenging centre, Albion & Brampton goods exchanges) Charitable reuse centres run by social service organizations (Goodwill, Salvation Army, etc.) Food reuse organization (such as Second Harvest)
MRFs <ul style="list-style-type: none"> Mississauga processing centre (MRF) for dry recyclables collected from the residential (and minor amounts from the commercial/institutional) sector in Mississauga and Brampton. Owned and operated by Laidlaw under contract to the Region MRF/Transfer Station in Bolton for Caledon material <i>One new Regional MRF for processing of dry recyclables (to meet 20 year requirement)</i> 	MRFs <ul style="list-style-type: none"> Laidlaw MRF will remain open but will not be part of the residential system MRF/Transfer Station in Bolton for Caledon material <i>One new Regional MRF for processing of dry recyclables (to meet 20 year requirement)</i> 	MRFs <ul style="list-style-type: none"> Laidlaw MRF will remain open but will not be part of the residential system MRF/Transfer Station in Bolton for Caledon material <i>One new Regional MRF for processing of dry recyclables (to meet 20 year requirement)</i> 	MRFs <ul style="list-style-type: none"> Laidlaw MRF will remain open but will not be part of the residential system MRF/Transfer Station in Bolton for Caledon material <i>One new Regional MRF for processing of dry recyclables (to meet 20 year requirement)</i> 	MRFs <ul style="list-style-type: none"> Laidlaw MRF will remain open but will not be part of the residential system MRF/Transfer Station in Bolton for Caledon material <i>One new Regional MRF for processing of dry recyclables (to meet 20 year requirement)</i> 	MRFs <ul style="list-style-type: none"> Laidlaw MRF will remain open but will not be part of the residential system MRF/Transfer Station in Bolton for Caledon material <i>One new Regional MRF for processing of dry recyclables (to meet 20 year requirement)</i>

TABLE A.4
PEEL REGION
RESIDENTIAL SYSTEM COMPONENTS
(continued)

Residential Promotion and Education <ul style="list-style-type: none"> • 3Rs promotion and education program, focused on the residential sector. • Consumer education program to reduce waste generation, includes videos, posters, calendars, pamphlets, advertisements, etc. 	Residential Promotion and Education <ul style="list-style-type: none"> • 3Rs promotion and education program, focused on the residential sector. • Consumer education program to reduce waste generation, includes videos, posters, calendars, pamphlets, advertisements, etc. 	Residential Promotion and Education <ul style="list-style-type: none"> • 3Rs promotion and education program, focused on the residential sector. • Consumer education program to reduce waste generation, includes videos, posters, calendars, pamphlets, advertisements, etc. • <i>Promotion/education on Direct Cost program</i> • <i>Promotion/education program on source reduction, pre-cycling, composting reuse and recycling</i> 	Residential Promotion and Education <ul style="list-style-type: none"> • 3Rs promotion and education program, focused on the residential sector. • Consumer education program to reduce waste generation, includes videos, posters, calendars, pamphlets, advertisements, etc. • <i>Promotion/education on Expanded Blue Box program.</i> • <i>Promotion/education program on source reduction, pre-cycling, composting reuse and recycling</i> 	Residential Promotion and Education <ul style="list-style-type: none"> • 3Rs promotion and education program, focused on the residential sector. • Consumer education program to reduce waste generation, includes videos, posters, calendars, pamphlets, advertisements, etc. • <i>Promotion/education for wet/dry system</i> • <i>Promotion/education for source reduction, pre-cycling, composting, reuse and recycling</i> 	Residential Promotion and Education <ul style="list-style-type: none"> • 3Rs promotion and education program, focused on the residential sector. • Consumer education program to reduce waste generation, includes videos, posters, calendars, pamphlets, advertisements, etc. • <i>Promotion/education for source reduction, pre-cycling, composting, reuse and recycling</i>
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TABLE A.5
LIST OF IC&I SYSTEM COMPONENTS

GTA IC&I Systems	System 1 Existing	System 2 Existing/Committed	System 3 Extended 3Rs Regulations	System 4 Expanded 3Rs Regulations	System 5 Expanded 3Rs Regulations with Organics	System 6 No Unprocessed Waste to Landfill
IC&I Collection - Dry Wastes	<ul style="list-style-type: none"> Voluntary source separation of dry recyclables by some IC&I generators Collection of source separated dry recyclables from the IC&I sector by private sector haulers and recyclers Curbside collection of IC&I recyclables in some areas by municipal forces IC&I depots at transfer stations for use by small business generators Landfill bans on specified materials (e.g. wood, tires, drywall, scrap metal, white goods, fine paper etc.) 	<ul style="list-style-type: none"> Voluntary source separation of dry recyclables by some IC&I generators Mandatory source separation of designated materials by major generators (3Rs Regulations) Collection of source separated dry recyclables from the IC&I sector by private sector haulers and recyclers Curbside collection of IC&I recyclables in some areas by municipal forces IC&I depots at transfer stations for use by small business generators Community recycling centres for use by small quantity IC&I generators Landfill bans on specified materials (e.g. wood, tires, drywall, scrap metal, white goods, fine paper etc.) 	<ul style="list-style-type: none"> Mandatory source separation of designated materials by most IC&I generators in GTA (to capture generators of 90% of total IC&I waste - revisions to 3Rs Regulations) Voluntary source separation of dry recyclables by small IC&I generators Collection of source separated dry recyclables from the IC&I sector by private sector haulers and recyclers Curbside collection of IC&I recyclables in some areas by municipal forces IC&I depots at transfer stations for use by small business generators Community recycling centres for use by small quantity IC&I generators Landfill bans on specified materials (e.g. wood, tires, drywall, scrap metal, white goods, fine paper etc.) 	<ul style="list-style-type: none"> Voluntary source separation of dry recyclables by some small IC&I generators Community recycling centres for use by small quantity IC&I generators Collection of source separated dry recyclables from the IC&I sector by private sector haulers and recyclers Curbside collection of IC&I recyclables in some areas by municipal forces IC&I depots at transfer stations for use by small business generators Landfill bans on specified materials (e.g. wood, tires, drywall, scrap metal, white goods, fine paper etc.) Mandatory source separation of expanded list of designated materials by most IC&I generators (to capture generators of 90% of total IC&I waste - revision to 3Rs Regulations) 	<ul style="list-style-type: none"> Voluntary source separation of dry recyclables by some small IC&I generators Mandatory source separation of expanded list of designated materials by most IC&I generators (to capture generators of 90% of total IC&I waste - revision to 3Rs Regulations) Collection of source separated dry recyclables from the IC&I sector by private sector haulers and recyclers Curbside collection of IC&I recyclables in some areas by municipalities IC&I depots at transfer stations for use by small business generators (Metro Toronto) Landfill bans on specified materials (e.g. wood, tires, drywall, scrap metal, white goods, fine paper etc.) Community recycling centres for use by small quantity IC&I generators 	<ul style="list-style-type: none"> Voluntary source separation of dry recyclables by small IC&I generators Mandatory source separation of designated materials by designated major generators (3Rs Regulations) Collection of source separated dry recyclables from the IC&I sector by private sector haulers and recyclers Curbside collection of IC&I recyclables in some areas by municipal forces IC&I depots at transfer stations for use by small business generators Community recycling centres for use by small quantity IC&I generators Landfill bans on specified materials (e.g. wood, tires, drywall, scrap metal, white goods, fine paper etc.) Mandatory processing of all dry wastes prior to landfilling (new policy required by Ontario, or condition on C of A for landfill)
IC&I Collection - Wet Wastes	<ul style="list-style-type: none"> Voluntary source separation of IC&I wet wastes Separate collection of IC&I wet wastes 	<ul style="list-style-type: none"> Voluntary source separation of IC&I generated organics Separate collection of IC&I wet wastes 	<ul style="list-style-type: none"> Voluntary source separation of IC&I generated organics Separate collection of IC&I wet wastes 	<ul style="list-style-type: none"> Voluntary source separation of IC&I generated organics Separate collection of IC&I wet wastes 	<ul style="list-style-type: none"> Mandatory source separation of wet wastes by designated IC&I generators (revision to 3Rs Regulations) Voluntary source separation of IC&I generated organics Separate collection of IC&I wet wastes 	<ul style="list-style-type: none"> Voluntary source separation of IC&I generated organics Separate collection of IC&I wet wastes
IC&I Processing - Dry Wastes	<ul style="list-style-type: none"> Processing of specific dry materials (e.g. C&D wastes, wood, drywall etc.) in specially designed facilities Processing centres for a wide range of dry recyclables collected from the IC&I sector, owned by the private sector and operated by private sector staff Processing of IC&I sector recyclables in municipal MRF's Processing of IC&I sector recyclables in small private sector recyclers 	<ul style="list-style-type: none"> Processing of specific dry materials (e.g. C&D wastes, wood, drywall) in specially designed facilities Processing centres for a wide range of dry recyclables collected from the IC&I sector, owned by the private sector and operated by private sector staff Processing of IC&I sector recyclables in municipal MRF's Processing of IC&I sector recyclables by small private sector recyclers 	<ul style="list-style-type: none"> Additional processing capacity for dry recyclables required Processing of specific dry materials (e.g. C&D wastes, wood, drywall) in specially designed facilities Processing centres for a wide range of dry recyclables collected from the IC&I sector, owned by the private sector and operated by private sector staff Processing of IC&I sector recyclables in municipal MRF's Processing of IC&I sector recyclables by small private sector recyclers 	<ul style="list-style-type: none"> Additional processing for wider list of dry materials required Processing of specific dry materials (e.g. C&D wastes, wood, drywall) in specially designed facilities Processing centres for dry recyclables collected from the IC&I sector, owned by the private sector and operated by private sector staff Processing of IC&I sector recyclables in municipal MRF's Processing of IC&I sector recyclables by small private sector recyclers 	<ul style="list-style-type: none"> Additional processing capacity for dry recyclables Processing of specific dry materials (e.g. C&D wastes, wood, drywall) in specially designed facilities Processing centres for dry recyclables collected from the IC&I sector, owned by the private sector and operated by private sector staff Processing of IC&I sector recyclables in municipal MRF's Processing of IC&I sector recyclables by small private sector recyclers 	<ul style="list-style-type: none"> Processing of specific dry materials (e.g. C&D wastes, wood, drywall) in specially designed facilities Processing centres for dry recyclables collected from the IC&I sector, owned by the private sector and operated by private sector staff Processing of IC&I sector recyclables in municipal MRF's Processing of IC&I sector recyclables by small private sector recyclers Mandatory processing of all dry wastes prior to landfilling (new policy) Mandatory processing of all mixed wastes prior to landfilling (new policy) Additional facilities for processing dry recyclables Additional facilities for processing mixed wastes

TABLE A.5

LIST OF IC&I SYSTEM COMPONENTS
(continued)

GTA IC&I Systems	System 1 Existing	System 2 Existing/Committed	System 3 Extended 3Rs Regulations	System 4 Expanded 3Rs Regulations	System 5 Expanded 3Rs Regulations with Organics	System 6 No Unprocessed Waste to Landfill
IC&I Processing - Wet Wastes	<ul style="list-style-type: none"> Centralized windrow composting of source-separated IC&I organics On-site composting of source separated organics generated by the IC&I sector Vermicomposting at some IC&I locations Rendering of food wastes from IC&I sector 	<ul style="list-style-type: none"> Centralized windrow composting of source-separated IC&I organics On-site composting of source separated organics generated by the IC&I sector Vermicomposting at some IC&I locations Rendering of food wastes from IC&I sector 	<ul style="list-style-type: none"> Centralized windrow composting of source-separated IC&I organics On-site composting of source separated organics generated by the IC&I sector Vermicomposting at some IC&I locations Rendering of food wastes from IC&I sector 	<ul style="list-style-type: none"> Centralized windrow composting of source-separated IC&I organics On-site composting of source separated organics generated by the IC&I sector Vermicomposting at some IC&I locations Rendering of food wastes from IC&I sector 	<ul style="list-style-type: none"> Centralized windrow composting of source-separated IC&I organics On-site composting of source separated organics generated by the IC&I sector Centralized composting of IC&I organics in in-vessel system Vermicomposting at some IC&I locations Rendering of food wastes from IC&I sector New composting facility (in-vessel) for IC&I organics 	<ul style="list-style-type: none"> Centralized windrow composting of source-separated IC&I organics On-site composting of source separated organics generated by the IC&I sector Vermicomposting at some IC&I locations Rendering of food wastes from IC&I sector New composting facility (in-vessel) for IC&I organics
IC&I Reuse	<ul style="list-style-type: none"> Reuse by IC&I generators, through the Canadian, Provincial and local waste exchange programs Community-based reuse programs for small IC&I generators Use of food wastes as animal feed Use of food waste for human consumption Landspreading of IC&I organics Refilling of IC&I containers and packaging (e.g. refillable bottles, refillable pails, drums, etc.) Use of re-usable packaging (e.g. reusable plastic and wood pallets) 	<ul style="list-style-type: none"> Reuse by IC&I generators, through the Canadian, Provincial and local waste exchange programs Community-based reuse programs and community recycling centres with reuse programs for small IC&I generators Use of food wastes as animal feed Use of food waste for human consumption Landspreading of IC&I organics Use of refillable containers (refillable bottles, refillable pails or drums, etc.) Use of re-usable packaging (e.g. reusable plastic and wood pallets) 	<ul style="list-style-type: none"> Reuse by IC&I generators, through the Canadian, Provincial and local waste exchange programs Community-based reuse programs and community recycling centres with reuse programs for small IC&I generators Use of food wastes as animal feed Use of food waste for human consumption Landspreading of IC&I organics Use of refillable containers (refillable bottles, refillable pails or drums) Use of re-usable packaging (e.g. reusable plastic and wood pallets) 	<ul style="list-style-type: none"> Reuse by IC&I generators, through the Canadian, Provincial and local waste exchange programs Community-based reuse programs and community recycling centres with reuse programs for small IC&I generators Use of food wastes as animal feed Use of food waste for human consumption Landspreading of IC&I organics Use of refillable containers (refillable bottles, refillable pails or drums) Use of re-usable packaging (e.g. reusable plastic and wood pallets) 	<ul style="list-style-type: none"> Reuse by IC&I generators, through the Canadian, Provincial and local waste exchange programs Community-based reuse programs and community recycling centres with reuse programs for small IC&I generators Increased use of food wastes as animal feed Increased use of food waste for human consumption Increased landspreading of IC&I organics Use of refillable containers such as packaging by businesses (refillable bottles, refillable pails or drums, etc.) Use of re-usable packaging (e.g. reusable plastic and wood pallets) 	<ul style="list-style-type: none"> Reuse by IC&I generators, through the Canadian, Provincial and local waste exchange programs Community-based reuse programs and community recycling centres with reuse programs for small IC&I generators Use of food wastes as animal feed Use of food waste for human consumption Landspreading of IC&I organics Use of refillable containers (refillable bottles, refillable pails or drums, etc.) Use of re-usable packaging (e.g. reusable plastic and wood pallets)
IC&I Reduction	<ul style="list-style-type: none"> Voluntary waste reduction actions by IC&I generators Voluntary reduction of packaging waste by the year 2000 (NAPP) - this includes reuse 	<ul style="list-style-type: none"> Voluntary waste reduction actions by IC&I generators Voluntary reduction of packaging waste by the year 2000 (NAPP) - this includes reuse Mandatory development of waste reduction action plans by designated major IC&I generators (defined in 3Rs Regulations) Mandatory development of packaging reduction action plans by designated major packaging generators (defined in 3Rs Regulations) 	<ul style="list-style-type: none"> Voluntary waste reduction actions by IC&I generators Voluntary reduction of packaging waste by the year 2000 (NAPP) - this includes reuse Mandatory development of waste reduction action plans by most IC&I generators (revision to 3Rs Regulations) Mandatory development of packaging reduction action plans by designated major packaging generators (defined in 3Rs Regulations) 	<ul style="list-style-type: none"> Voluntary waste reduction actions by small IC&I generators Voluntary reduction of packaging waste by the year 2000 (NAPP) - this includes reuse Mandatory development of waste reduction action plans by most IC&I generators (revision to 3Rs Regulations) Mandatory development of packaging reduction action plans by designated major packaging generators (defined in 3Rs Regulations) 	<ul style="list-style-type: none"> Voluntary waste reduction actions by small IC&I generators Voluntary reduction of packaging waste by the year 2000 (NAPP) - this includes reuse Mandatory development of waste reduction action plans by most IC&I generators (revision to 3Rs Regulations) Mandatory development of packaging reduction action plans by designated major packaging generators (defined in 3Rs Regulations) 	<ul style="list-style-type: none"> Voluntary waste reduction actions by small IC&I generators Voluntary reduction of packaging waste by the year 2000 (NAPP) - this included reuse Mandatory development of waste reduction action plans by designated major IC&I generators (defined in 3Rs Regulations) Mandatory development of packaging reduction action plans by designated major packaging generators (defined in 3Rs Regulations)

TABLE A.5
LIST OF IC&I SYSTEM COMPONENTS
(continued)

GTA IC&I Systems	System 1 Existing	System 2 Existing/Committed	System 3 Extended 3Rs Regulations	System 4 Expanded 3Rs Regulations	System 5 Expanded 3Rs Regulations with Organics	System 6 No Unprocessed Waste to Landfill
IC&I Programs	<ul style="list-style-type: none"> • Voluntary waste audits performed by IC&I generators • Independent voluntary waste reduction programs in private companies • Voluntary packaging reporting by packaging users (NAPP) 	<ul style="list-style-type: none"> • Voluntary waste audits performed by IC&I generators • Independent voluntary waste reduction programs in private companies • Mandatory waste audits by designated major IC&I generators (3Rs Regulations) • Mandatory packaging audits by designated major packaging generators (3Rs Regulations) • Voluntary packaging reporting by packaging users (NAPP) 	<ul style="list-style-type: none"> • Voluntary waste audits performed by small IC&I generators • Independent voluntary waste reduction programs in private companies • <i>Mandatory waste audits by most IC&I generators (revision to 3Rs Regulations)</i> • Mandatory packaging audits by designated major packaging generators (3Rs Regulations) • Voluntary packaging reporting by packaging users (NAPP) 	<ul style="list-style-type: none"> • Voluntary waste audits performed by small IC&I generators • Independent voluntary waste reduction programs in private companies • <i>Mandatory waste audits by most IC&I generators (revision to 3Rs Regulations)</i> • Mandatory packaging audits by designated major packaging generators (3Rs Regulations) • Voluntary packaging reporting by packaging users (NAPP) 	<ul style="list-style-type: none"> • Voluntary waste audits performed by small IC&I generators • Independent voluntary waste reduction programs in small private companies • Mandatory waste audits by most IC&I generators (revision to 3Rs Regulations) • Mandatory packaging audits by major packaging generators (3Rs Regulations) • Voluntary packaging reporting by packaging users (NAPP) 	<ul style="list-style-type: none"> • Voluntary waste audits performed by small IC&I generators • Independent voluntary waste reduction programs in small private companies • Mandatory waste audits by most IC&I generators (defined in 3Rs Regulations) • Mandatory packaging audits by major packaging generators (3Rs Regulations) • Voluntary packaging reporting by packaging users (NAPP)
IC&I Promotion and Education	<ul style="list-style-type: none"> • Promotion/education programs focused on reducing waste disposed by the IC&I sector, carried out by the regional municipality • Promotion/education of IC&I waste reduction by non-profit organizations • Promotion/education of IC&I waste reduction by associations 	<ul style="list-style-type: none"> • Promotion/education programs focused on reducing waste disposed by the IC&I sector, carried out by the regional municipality • Promotion/education of IC&I waste reduction by non-profit organizations • Promotion/education of IC&I waste reduction by associations • Mandatory posting of waste reduction plans for review by employees by major IC&I generators (3Rs Regulations) 	<ul style="list-style-type: none"> • Promotion/education programs focused on reducing waste disposed by the IC&I sector, carried out by the regional municipality • Promotion/education of IC&I waste reduction by non-profit organizations • Promotion/education of IC&I waste reduction by associations • <i>Mandatory posting of waste reduction plans for review by employees by most IC&I generators (revision to 3Rs Regulations)</i> 	<ul style="list-style-type: none"> • Promotion/education programs focused on reducing waste disposed by the IC&I sector, carried out by the regional municipality • Promotion/education of IC&I waste reduction by non-profit organizations • Promotion/education of IC&I waste reduction by associations • <i>Mandatory posting of waste reduction plans for review by employees by most IC&I generators (revision to 3Rs Regulations)</i> 	<ul style="list-style-type: none"> • Promotion/education programs focused on reducing waste disposed by the IC&I sector, carried out by the regional municipality • Promotion/education of IC&I waste reduction by non-profit organizations (e.g. RCO) • Promotion/education of IC&I waste reduction by associations • <i>Mandatory posting of waste reduction plans for review by employees by most IC&I generators (revision to 3Rs Regulations)</i> 	<ul style="list-style-type: none"> • Promotion/education programs focused on reducing waste disposed by the IC&I sector, carried out by the regional municipality • Promotion/education of IC&I waste reduction by non-profit organizations • Promotion/education of IC&I waste reduction by associations • Mandatory posting of waste reduction plans for review by employees by most IC&I generators (revision to 3Rs Regulations)



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Ontario Ministry of Enviro
Greater Toronto area
3Rs analysis - arzb
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